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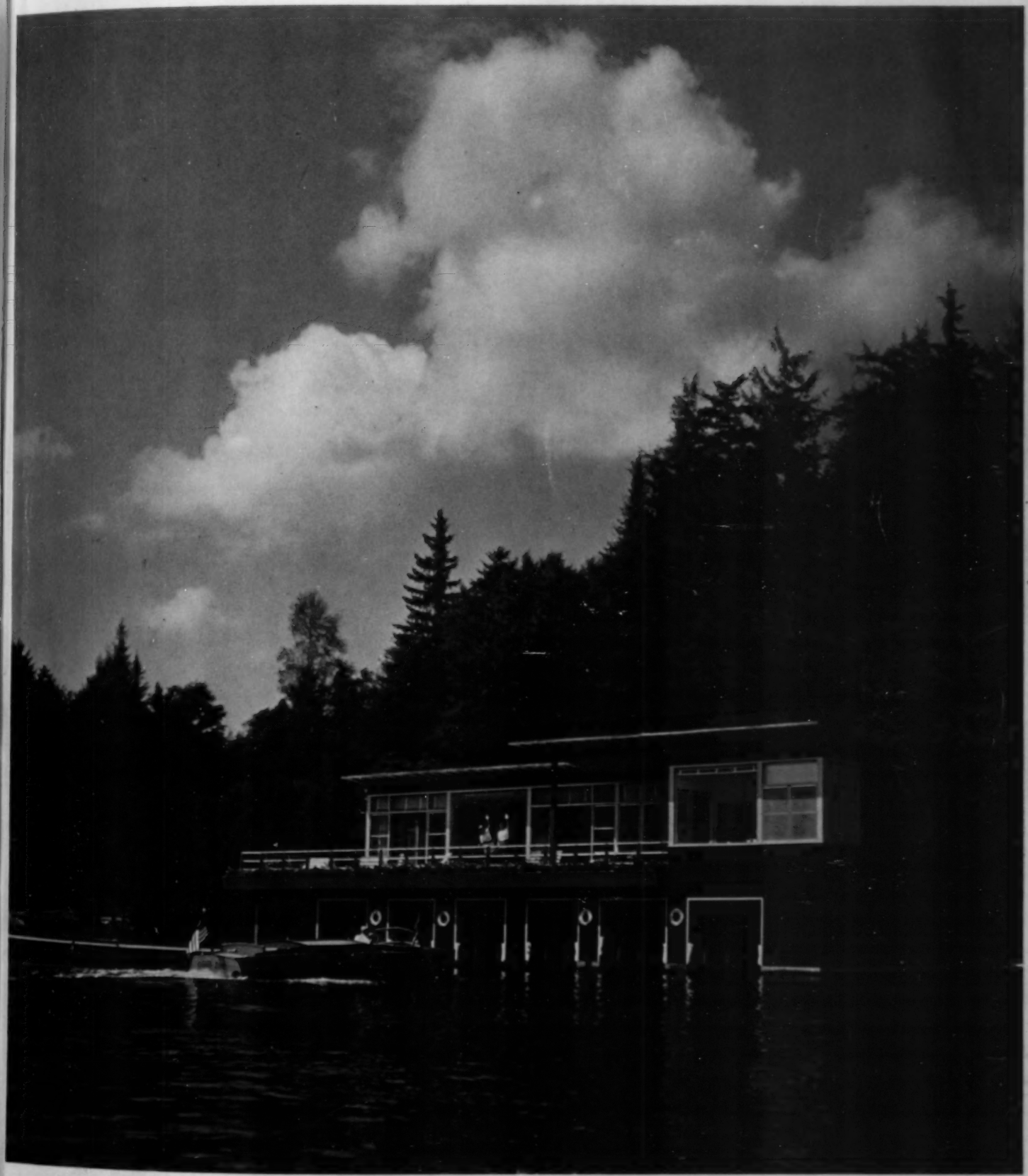

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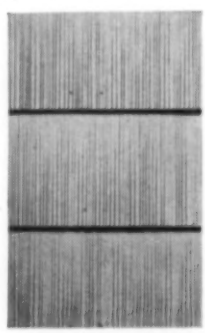

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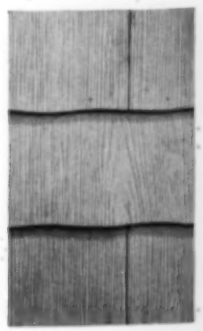

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THE RECORD REPORTS

HHFA Program Picks Up Speed with Appointment of an Assistant Administrator; FHA Prepares Mortgage Insurance Plan for Military Housing

More than any other word, confusion aptly described the state of housing legislation on the national level as the Senate worked doggedly at its stuffed calendar and the House took a 26-day recess. The federal housing agency was moving ahead rapidly with the new public housing program, assigning reservation quotas to those new cities that had made up their minds as to how many units they want to construct in the next two years.

There were important progressive developments in the housing agencies as a result of legislation enacted this year.

Mr. Foley announced appointment of Berchmans T. Fitzpatrick, HHFA's general counsel, as his assistant administrator. This now assigns to Fitzpatrick new responsibilities in connection with public housing, slum clearance and research activities. He had been serving as a program director but now has a position ranking with heads of three constituent agencies — Federal Housing Administration, Home Loan Bank Board and Public Housing Administration.

Official Washington agreed that Foley's was a wise choice. Fitzpatrick has served in legal and administrative positions in connection with government housing programs since 1938. He was general counsel of the old National Housing Agency as well as HHFA. Since March 1948, he had served as assistant administrator for program operations.

The industry was watching for two other appointments scheduled to come soon under the new Housing Act of 1949. Foley planned to name a Director of Slum Clearance and a Director of Research to head up those respective programs.

Public Housing Gets Underway

Meanwhile, the Public Housing Administration showed signs of new life. Saddled with the handling of the nation's new six-year, 810,000 unit program of public housing, this agency began assigning "program reservations" amid considerable pomp in the administrator's office. Galveston, Tex., was the first city to bring in its two-year plan for approval. It was followed closely by Norfolk, Va., Los Angeles and Chicago. New York was assigned 23,000 units for construction in two years and the list grew steadily.

At the same time most of these cities applied for preliminary planning loans so they might get an immediate start. While Congress fumbled with appropriation bills to support administrative functions in connection with the public housing program, the legal machinery had been set up for these early loans. They awaited only the formality of approval by the President. PHA Administrator John Taylor Egan planned to send a number of the loan applications to the White House in a single group with immediate presidential approval anticipated.

The preliminary loans will be used for preparation of development plans including architectural work. As soon as the local housing authority has obtained its program quota on a two-year projection and its preliminary loan if one is sought, it can prepare its local program and enter into a contract with PHA for financial aid. It then proceeds to plan its projects in detail, acquire sites and call for construction bids.

It is significant that all initiative must come from the local group first. (Of approximately 500 local housing authorities that have received instructions from PHA, 472 have had past experience with public housing programs under earlier laws. Eighty-six per cent are in localities with populations of less than 100,000, 63 per cent in cities of 25,000 or under.) A program reservation does not bind the locality to contracts for capital loans or annual subsidy payments. It merely indicates PHA's intention to set aside enough loan and subsidy money to cover the indicated quota of units until the authority is able to prepare its specific local program.

Relation to Unemployment

There is a tie-in now between this housing activity and the Administration's effort to cushion the unemployment blow in certain localities with federal construction and procurement speed-ups. Foley has announced applications of local authorities in those cities cited as being in the "depressed" group (where unemployment has reached 12 per cent or more) will be given special attention by PHA in Washington. So far, the list of 32 critical areas includes only industrial cities in the east and a few mining areas of the near midwest.

All this puts public housing now in the "going" category. The highly important slum clearance and urban redevelopment program is another phase in

(*Continued on page 10*)

—Drawn for the RECORD by Alan Dunn

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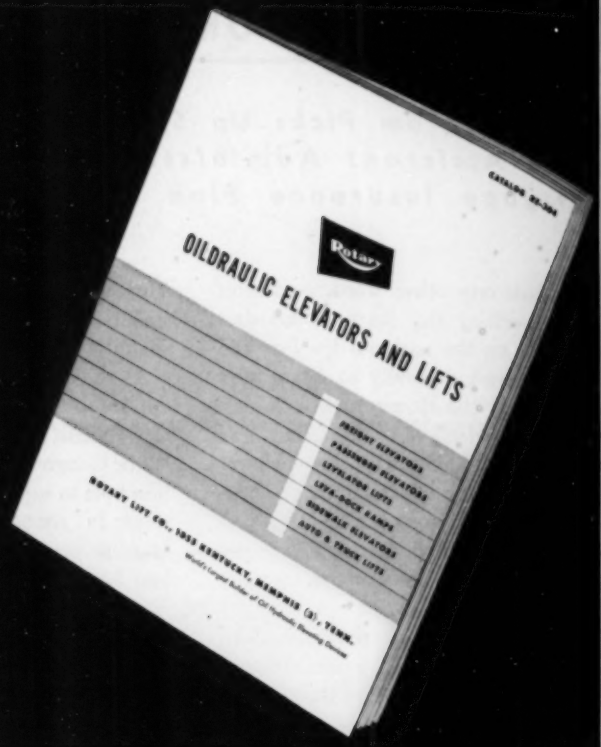

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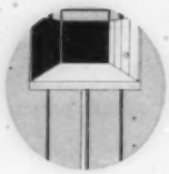

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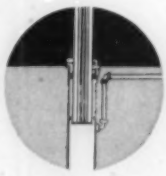

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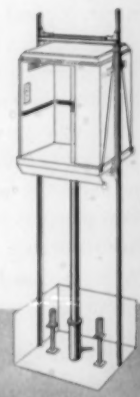

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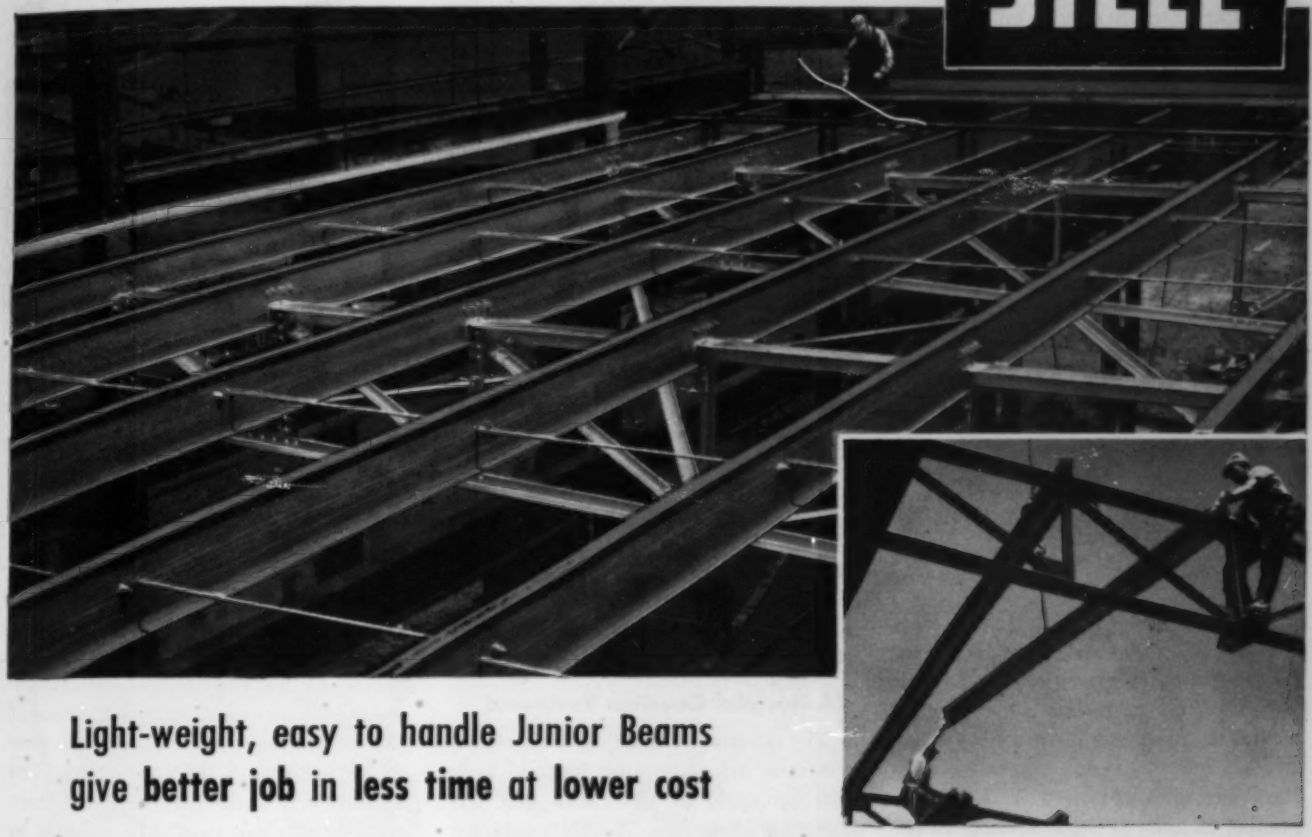

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THE RECORD REPORTS

(*Continued from page 7*)

HHFA's administration of the new housing law. This is lagging a bit due to inexperience in its details. But the administrator's office has issued a preliminary explanatory statement defining how slum clearance may be initiated and this has been circulated to mayors of all cities of 25,000 or more.

The statement explains prerequisites for participation in slum clearance activity: types of local projects that can be assisted, kinds of work and redevelopment activity eligible for federal help, types of federal loans available to cities for slum clearance projects, provisions for private financing, requirements for federal capital grants and local grants-in-aid, legal authority required and other items. This is preliminary in that it advises cities what to do in preparing for formal filing of applications later on. Still, HHFA is trying to help cities "get their slum clearance and urban redevelopment projects underway without undue delay."

Military Housing Program

While PHA directed new energies to its program assignments, the Federal Housing Administration began a new insurance program of its own — that for military housing. Rough estimates from the armed services placed at 60,000 the number of units of rental housing to be built at Army, Navy, and Air Force installations. FHA Commissioner Franklin D. Richards issued rules and regulations. All such housing will be built by private contractors. Stemming from the Wherry bill, the new Act amends the National Housing Act of 1937 by adding a new Title — VIII. This provides FHA insurance of mortgages on rental housing for both civilians and military employees of the National Military Establishment in the U. S.

Insurance under Title VIII parallels the Sec. 608 provisions. Maximum of any single mortgage is $5 million, representing not more than 90 per cent of replacement costs and not more than $8100 per family unit except where the need will be better served by single-family dwelling units. In such latter cases, mortgage principal may be as much as $9000 per family unit. Interest rates are held at four per cent.

The Army says it plans to sponsor construction of a large number of garden-type apartments, a minimum of single-family residences.

Funds to implement administration of all these new programs had not been appropriated at this writing. The House had passed the Supplemental Appropriations bill of 1950 containing them, but the Senate's subcommittee had just started work on it.

VA Hospital Question Reviewed

The question of building those 16,000 Veterans Administration hospital beds was up again in the House but left dangling when Rep. Rankin could not get support for his resolution attempting

(*Continued on page 12*)

Before

After

Studtman Photo

ECONOMY REMODELING

The above pictured building housing Air Conditioning, Inc., Carrier Corp. dealer in Austin, Tex., was remodeled at an approximate cost of $2500 from plans drawn by Page, Southerland & Page, Austin architects.

Materials used in the process were paint, corrugated transite, sheet metal and 4 by 4 in. posts. Economy was observed by use of the sheet metal shop connected with the firm in production of the projecting frame, louvers on door and window and the sign letters. The transite fence conceals storage of sheet metal and scrap materials essential to the business. Color scheme is dark gray, light gray and red coral for lettering.

NEWS FROM CANADA — *by John Caulfield Smith*

Architects Display Wares

One of the eye-catching booths at the recent Canadian National Exhibition, Toronto, was jointly sponsored by the Royal Architectural Institute of Canada and the National Gallery of Canada.

Purpose of the display was to explain the importance of architecture in everyday life. It did so by means of example, showing what the profession itself considered its best work. There were photographs of structures in nearly every province — schools, hospitals, churches, factories and commercial and public buildings. Community planning and housing came in for their share of attention. And, to lift the veil of mystery that shrouds the public's understanding of how buildings are designed, generous space was devoted to the architect's relationship with clients. The manner in which he analyzes their problems and develops solutions in keeping with their needs, tastes and pocketbooks was fully publicized.

The National Gallery proposes to send the exhibition to tour various Canadian cities. This will assist many thousands of people to gain an appreciation of the architect's role in modern society.

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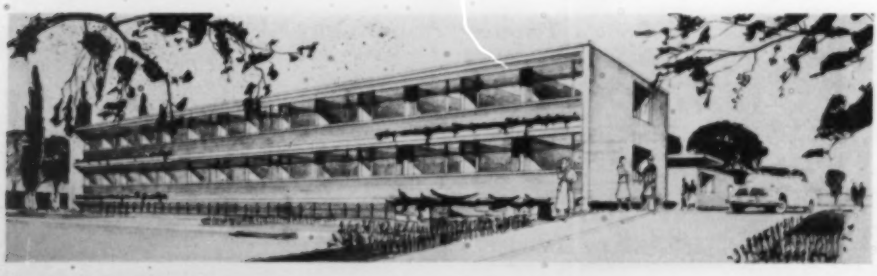

Humber Memorial Hospital, Weston, Ont., has 52 beds. By John B. Parkin Associates

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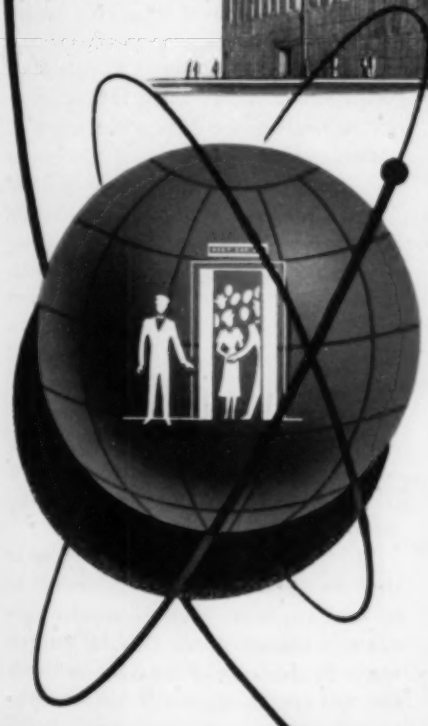

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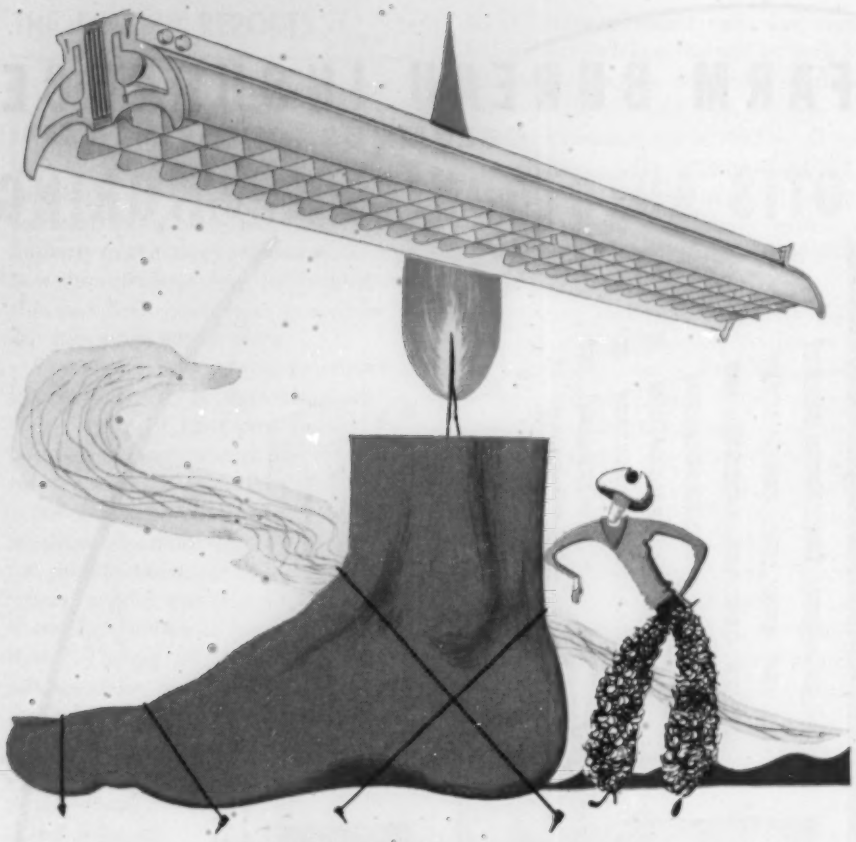

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THE RECORD REPORTS

(*Continued from page 10*)

to force President Truman to order VA to go ahead with authorized plans.

These beds are the 24 new and 14 remodeling projects ordered stricken from the construction program originally approved by Congress. Rankin said he wanted to force the White House to reverse itself on the decision not to go ahead with these 16,000 beds; but though he tried twice to get his resolution passed without rules committee approval, he was defeated. His office said he might try other tactics after the House recess. Approximately $270 million in contract authority is involved. This amount appears in the appropriation bills for fiscal 1950, designated for the construction of the additional VA hospital facilities, but this does not mean the work will proceed. The executive order to VA still holds preference and it was doubtful Congress would go as far as to try to overrule the White House in this matter.

Another question of VA policy in construction arose with House committee hearings on bills which tried to authorize employment of GI trainees in the construction trades on outside "live" projects. The House finally passed a bill limiting this outside employment to school building construction — the building of any publicly supported school structures. In hearings, the proposals had drawn the wrath of organized labor, which said general outside employment would pit the apprentice against the journeyman with unfair competition, and opposition from the Budget Bureau and VA itself as being unworkable.

The House-passed measure, going to the Senate, does not allow the trainee to be paid any more than his regular subsistence allotment for this off-campus work. Proponents of the plan to throw the door open to apprentices in GI training schools to work on all public buildings said they sought a plan whereby the veteran learning construction skills could get more practical experience. As it is now, they argued, he merely builds up walls in the classroom and tears them down again.

Amendments Considered

Housing officials were watching the complex legal manipulations on Capitol Hill and wondering what would come

(*Continued on page 14*)

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THE RECORD REPORTS

(*Continued from page 12*)

next. They had observed a two months' continuation of the Federal Housing Administration mortgage insurance programs with a concurrent boosting of Title II (National Housing Act) authority by $500 million. This gave Congress a breather for more deliberate consideration of the second broad, long-range housing bill of the session — the Housing Amendments of 1949.

Just before House members took their 26-day respite, they approved the Spence bill and sent it over to the Senate, planning to complete work on that measure for a conference committee report after their return to business Sept. 21.

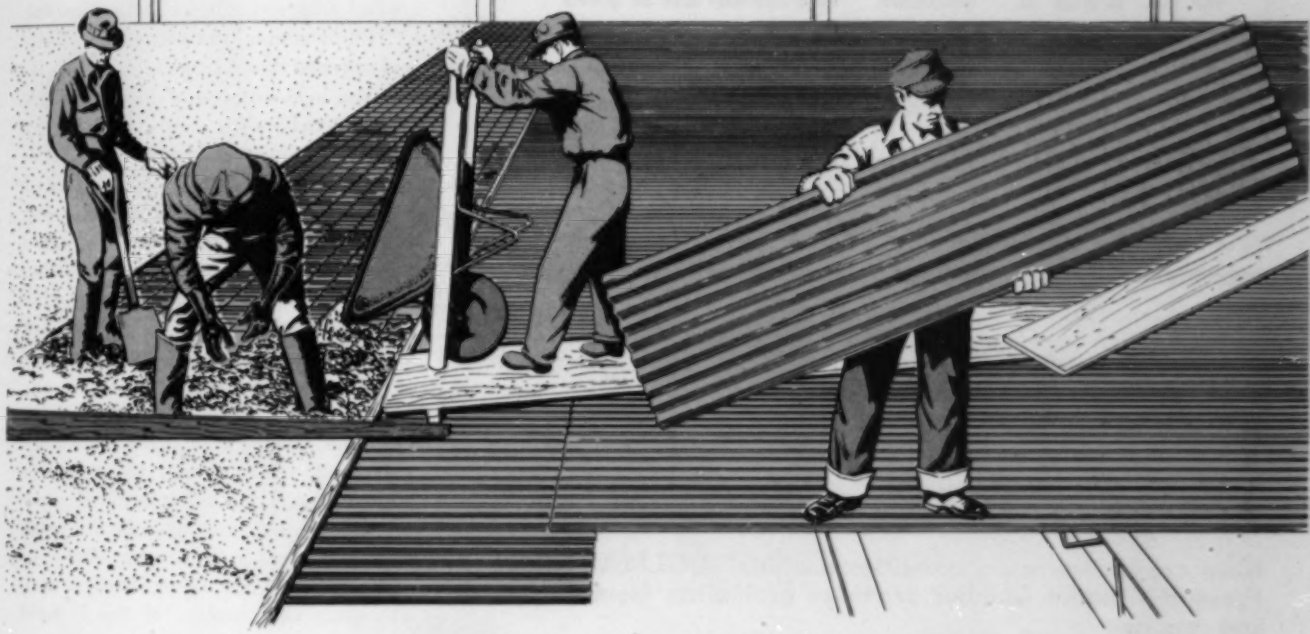
But the Spence bill which finally gained approval was quite different from the Spence bill introduced to parallel Sparkman's proposed amendments to the National Housing Act in the Senate. When the rules committee refused to clear the measure with its controversial direct loan provisions, the banking committee chairman quickly submitted a new bill without them to get a floor hearing. Immediately direct loans to veterans at four per cent interest rate for housing purposes were put into the new bill by amendment.

The enthusiasm of backers was short-lived, however. The next day Rep. Marcantonio (ALP-N. Y.) succeeded in tacking on an anti-segregation amendment which surely would have spelled defeat for the Spence bill had it stuck. But there is always another legislative day ahead. Rep. Spence brought out another clean committee bill, again shorn of the highly debatable direct loans. This time all effort to re-enter the direct loans by amendment was defeated. Two more attempts to tack on the fatal "civil rights" issue also were beaten back. (These last-minute proposals to end all segregation of races in housing constructed under federal assistance programs were submitted by Dollinger [D-N. Y.] and again by Marcantonio.)

House passage of the legislation without direct federal loans to veterans for individual housing construction or to non-profit cooperatives and trusts for large-scale ventures left up to the Senate this vital question that has drawn so much fire from critical industry sources. A $300 million fund for use by the Vet-

(*Continued on page 16*)

the concrete you save pays for...



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tough-temper corrugated steel base for concrete in joist floors and roofs

Corruform pays for itself with the concrete it saves. That's because Corruform is tough-tempered to spring back under construction abuse and carries concrete over joists without sag, stretch, bend or leakage. Tough-temper, high strength Corruform, made by processes patented by Granite City Steel Company, is nearly twice as strong as conventional steel of the same shape and weight.

Furnished uncoated, mill-primed for painted exposed joist construction, or galvanized . . . with clips to fit all standard joists. Send for AIA file today.

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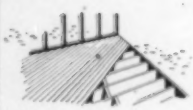
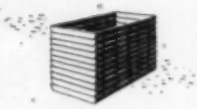
WOLMANIZED PRESSURE TREATED LUMBER

Means Absolute Protection to Wood Endangered by ROT and TERMITES

Water Tanks



Sills and Joists

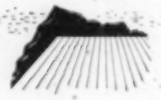


Cooling Towers

Roof Decks

Humidified Buildings

Foundations



Floors

Other Moisture "Traps"

Here are six common conditions where WOLMANIZED Pressure-Treated Lumber provides protection from decay and termites:

1. Where excessive ground moisture, rain or thaws cause early decay failures.
2. Where wood near the ground is open to termite attacks.
3. Where wood is in contact with damp concrete or masonry.
4. Where steam and vapor from industrial processes promote wood decay.
5. Where walls, floors, ceilings are subject to condensation from refrigeration.
6. Where wood is exposed to moisture in artificially humidified buildings.

Investigations by qualified technologists prove that on installations where decay and termites ordinarily shorten lumber life, WOLMANIZED Pressure-Treated Lumber lasts *Three to Five Times Longer* than untreated wood.

Such lasting protection is assured because penetrating, preservative solutions are forced, by vacuum-pressure treatment, deeply into the wood fibers of WOLMANIZED Lumber. And, WOLMANIZED Lumber is clean, odorless, paintable, non-corrosive, non-leaching and glueable. Only WOLMANIZED Lumber offers *all* these extra advantages.

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THE RECORD REPORTS

(*Continued from page 14*)

erans Administration in making direct loans to veterans whenever they cannot get four per cent money from their local lending institutions, and another $1 billion for direct loans to cooperatives remained a part of the Sparkman bill as it was reported out by the senate banking committee.

Victory for Builders

Thus, the home builders and the lenders had achieved a major victory insofar as House action was concerned. They had opposed direct loans bitterly all the way through, supporting only the FHA program extensions. Another fight lay ahead in the Senate, however, with certain opposition looming during floor consideration. It was possible the argument might have to be carried over into a conference of both houses, a condition that would throw this major housing bill into the final days of the hectic first session and cloud its chances for survival in any extensive form.

Though the direct loans claimed the headlines, there were other issues involved of vital concern to architects and builders. The House-approved measure, for example, liberalizes the mortgage insurance programs in an effort to emphasize low-cost home construction. The secondary market of the Federal National Mortgage Assn. in Reconstruction Finance Corp. is thrown wide open to most of the loans. It now can absorb up to only 50 per cent of the individual portfolios of lending institutions. There is a fund of $75 million in the House bill for direct loans by R.F.C. to manufacturers of prefabricated housing now holding commitments from that agency under the present Sec. 203 provision. Also, the Spence bill contains direct loans to educational institutions by R.F.C., unlimited in amount — 40-year four per cent loans to construct campus housing facilities.

All this, covered not in identical form but by similar provisions in the Sparkman amendments, would mean large new volumes of work for all segments of the housing industry if enacted.

If the Spence measure should finally be adopted in its present form, the following loans would be taken out from under the 50 per cent limitation now applying to each lender and henceforth could be sold in full amount to the R.F.C.

(*Continued on page 18*)

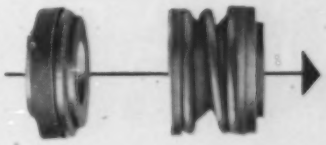
recommend it with confidence...

FAIRBANKS-MORSE
hot water circulating pump!

Here is the hot water circulating pump which has all the features of construction and performance that enable plumbing and heating contractors, builders and architects to recommend it without reservation for homes, apartment buildings, institutions and commercial and industrial installations.

Here are the features which win approval!

Silent operation—perfectly balanced single-suction, open-type impeller eliminates vibration . . . molded rubber shaft couplings, resilient mounting eliminate noise.

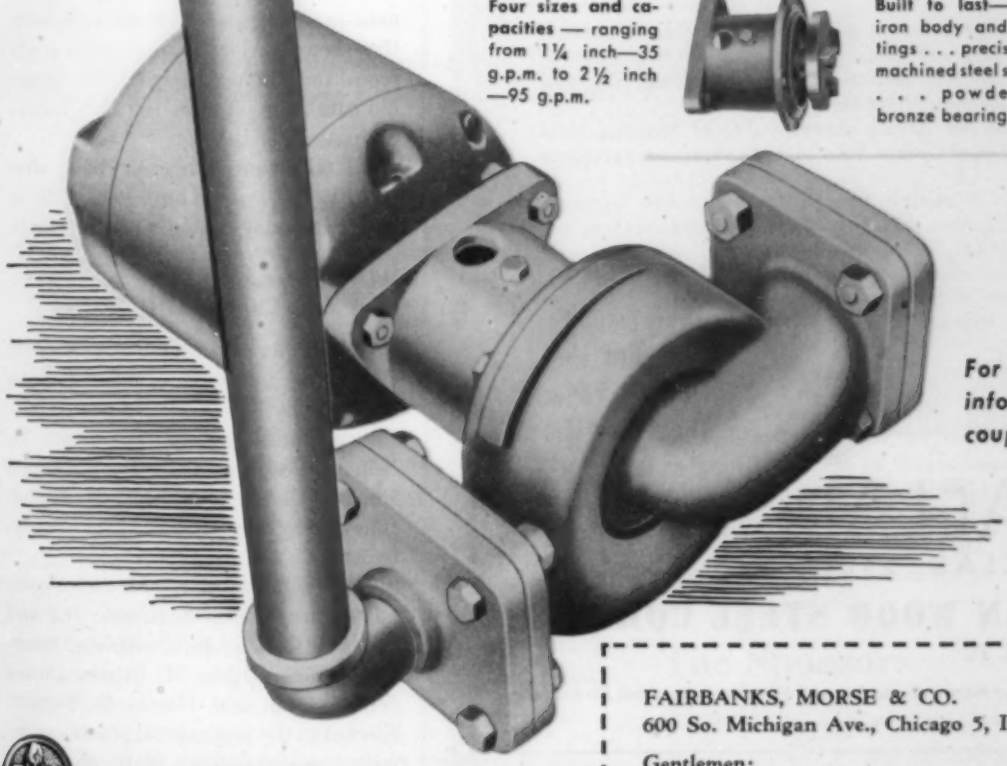


Leakproof—face-type mechanical seal gives positive protection against leakage.

Four sizes and capacities — ranging from 1¼ inch—35 g.p.m. to 2½ inch —95 g.p.m.

Built to last—cast iron body and fittings . . . precision-machined steel shaft . . . powdered bronze bearings.

Positive lubrication —provided by ample oil reservoir above bearings. Reservoir rarely needs refilling.



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I'm interested in your hot water Circulating Pump. Please send me further information.

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Now architects can design beautiful, high luster doors, panels, building facades, store fronts and ornaments, and be confident that they will retain their mirror-like finish almost forever. Permaclad, the new Stainless Clad Steel has made this possible.

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Reduction of weight is possible through the use of AW Dynalloy, high strength, low alloy steel as a backing. When lighter sections are used usually substantial savings can be effected.

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THE RECORD REPORTS

(*Continued from page 16*)

agency, clearing out the portfolios of lending institutions and permitting them to do more business:

Title I, Sec. 8, rural home loans;
Title II 203 (b) 2 D, urban low priced new home loans;
Title II 207, rental housing loans;
Title II 213, cooperative loans;
Title VI 608, rental housing loans;
Title VIII 803, military housing loans;
Title VI 611, loans to large-scale builders;
Title VI 610, loans on purchase of public housing, and
Veterans Administration guaranteed loans of less than $10,000 per dwelling unit.

The ratio of guarantee on GI home loans would be increased from 50 per cent to 60 per cent and the amount raised from $4000 to $7500 with the loan term extended from 25 to 30 years. Builders and lenders both balked at the idea of repealing the combination FHA-VA guaranteed loan but the Spence measure as well as the stronger Sparkman amendments would do away with these benefits. The Senate version would repeal them immediately but the Spence bill cuts them off after 180 days following passage of the Act.

All GI financed housing built after Nov. 1, 1949, would have to conform to VA's minimum construction standards.

WITH THE A.I.A.
New York Chapter Officers

Officers for the coming year were elected at the 80th annual business lunch of the New York Chapter, A.I.A. Chapter president will be Walter H. Kilham. Also named to office were: Ben John Small, vice president, M. Milton Glass, secretary and William Potter, treasurer.

New members of the executive committee are Morris Ketchum, Jr., and Robert Allan Jacobs. Continuing members include Harry M. Prince, Daniel Schwartzman and Harold R. Sleeper. Elected to the professional practice committee were Geoffrey Platt, chairman, Malcolm G. Duncan and John C. B. Moore; to the medal of honor jury: Max Abramovitz, William Lescaze, Lorimer Rich and Stephen F. Voorhees. The committee on fellows to 1952 will include

(*Continued on page 20*)

A *New* ARCHITECTURAL COMPETITION

Covering One of America's Most Popular and Rapidly-Developing Types of Housing . . *The Suburban Apartment*

$5,000 IN CASH AWARDS

for the Most Interesting and Practical new designs for . . .

Eight-Family Wood Garden-Type APARTMENT BUILDING of Wood Frame Construction

Open to:

Architects, Designers, Draftsmen and Senior Students. Opens October 1, 1949—closes January 15, 1950. Prizes awarded March 15, 1950.

The Problem:

The expanding popularity of the suburban or garden-type of apartment offers a broad and interesting new architectural challenge.

This competition is intended as a source of inspiration to architectural designers, and to builders, developers and investors in communities which have need for increased rental facilities, and who may be encouraged through examples of improved design and economy, to undertake more construction of this type.

It is the sponsor's belief that a well-integrated combination of the fundamentally low-cost garden-type of structure with traditionally low-cost wood construction can provide an economical satisfactory answer to many existing housing problems.

It is believed that this competition will serve to demonstrate how well architectural grace, beauty and originality can be expressed in a multi-family dwelling designed in wood.

The Prizes:

Major Awards		Student Awards	
First Prize	$1,500	First Prize	$500
Second Prize	$750	Second Prize	$250
Third Prize	$500	Third Prize	$150
Honorable Mention 10 Awards at $100 each.		Honorable Mention 7 Awards at $50 each.	

The Jury of Awards:

MR. GEORGE W. PETTICORD, JR., A.I.A. ..... Washington, D. C.
MR. JOHN M. WALTON, A.I.A. ..... Washington, D. C.
MR. EDWARD R. CARR, *Builder* ..... Washington, D. C.
Professional Advisor: LAWRENCE M. STEVENS, *Architect*, Washington, D. C.

How to Enter:

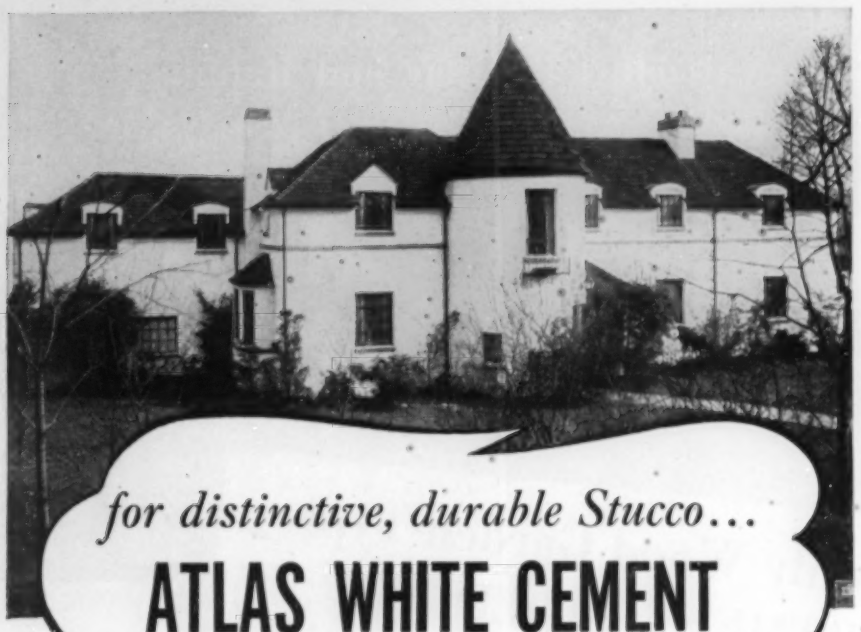
To enter this competition, secure an entrance application form and contest rules from the Contest Secretary, Wood Garden Apartment Design Contest, c/o Timber Engineering Company, 1319 18th Street, N. W., Washington 6, D. C. Upon receipt of the application form properly filled out, the company will send you a file of informational data on the use of its products as specified in the contest conditions.

The Sponsor:

TIMBER ENGINEERING COMPANY
An Affiliate of
NATIONAL LUMBER MANUFACTURERS ASSOCIATION
1319 - 18th Street N. W. Washington 6, D. C.

Approved by the Committee on Competition of the AMERICAN INSTITUTE OF ARCHITECTS

for distinctive whiteness... **STUCCO**



for distinctive, durable Stucco...

ATLAS WHITE CEMENT

A crisp white exterior of stucco adds beauty and distinction to any building. And when it's made with a matrix of Atlas White Cement (or Atlas White Duraplastic*), the result is a distinctive white finish with a durable beauty that smiles at time and weather.

Such a matrix in white, or in one of an infinite variety of pigment-based colors, brings out the full beauty of stucco. It also sets off, in contrast or blend, the full color values of pigments used in portland cement paint or of aggregates used in terrazzo and architectural concrete slabs.

Atlas White Cement complies with ASTM and Federal Specifications for portland cement. It has the same advantages when used for concrete and is used in the same way. Concrete made with Atlas White Cement cleans easily. Maintenance costs are low.

Left wing addition to house shown above was built with Atlas White *Duraplastic air-entraining cement*. Adds new advantages to stucco at no extra cost. Provides increased plasticity that makes application easier; insures greater durability; offers stouter resistance to weather. Ask for details.

For further information on the uses of Atlas White Cement, see SWEET'S Catalog, Section 4B/3 and 13C/5, or write to Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Bldg., New York 17, New York.

**DURAPLASTIC* is the registered trade mark of the air-entraining portland cement made by the Universal Atlas Cement Company.*

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ATLAS WHITE CEMENT

FOR TERRAZZO, PAINT, SLABS, STUCCO

"THEATRE GUILD ON THE AIR"—*Sponsored by U. S. Steel Subsidiaries Sunday Evenings—NBC Network*

THE RECORD REPORTS

(Continued from page 18)

Louis Skidmore and Edgar I. Williams and William F. Lamb and Clarence Stein to 1950 and 1951 respectively (to fill the unexpired terms of Ralph Walker and Arthur Holden who had resigned because of the new office each now holds with the national body).

New England A.I.A. Meeting

The six New England chapters of the A.I.A. plan to hold a seminar to discuss the proper design of hospitals early in December in Boston. The program will include topics of interest to the hospital consultants, administrators and medical personnel as well as to professional architects. Speakers will be chosen from among leaders in the hospital field and will deal with the most up-to-date solutions to the problems encountered in the design of the medium sized general hospital.

The seminar will be held for two days and will include special luncheons featuring speakers of national eminence on topics of concern to the development of the hospital system in New England.

The committee in charge of the seminar includes architects from all six New England states: from Massachusetts—Charles D. Maginnis, Jr., Sherman Morss, Charles G. Loring, Hugh A. Stubbins, Jr.; Connecticut—Victor A. Frid, Hugh McK. Jones, Jr.; New Hampshire—Nicholas Isaak, Stewart A. Lyford; Rhode Island—James E. Walker, Bernt C. V. Zetterstrom; Maine—Alonzo J. Harriman, Walter S. Lancaster; Vermont—William W. Freeman, Kenneth Reid, chairman.

Five-State Convention

More than 200 architects from five states are expected to attend a convention for members of the A.I.A., planned by the St. Louis chapter. Members of two state associations not affiliated with the Institute are also invited to the meeting which will take place Nov. 18 and 19. States which will be represented include Nebraska, Kansas, Iowa, Oklahoma and Missouri.

Gift to A.I.A. Chapter

The Buffalo-Western New York Chapter, A.I.A., has been awarded $2500 annually for the establishment of Edward H. Moeller scholarships for the study of architecture. The money is part

(Continued on page 22)

...HERE'S MUD IN YOUR BASEMENT!

PLUS *ALL* THE OTHER DESTRUCTION CAUSED BY *BACKWATER*

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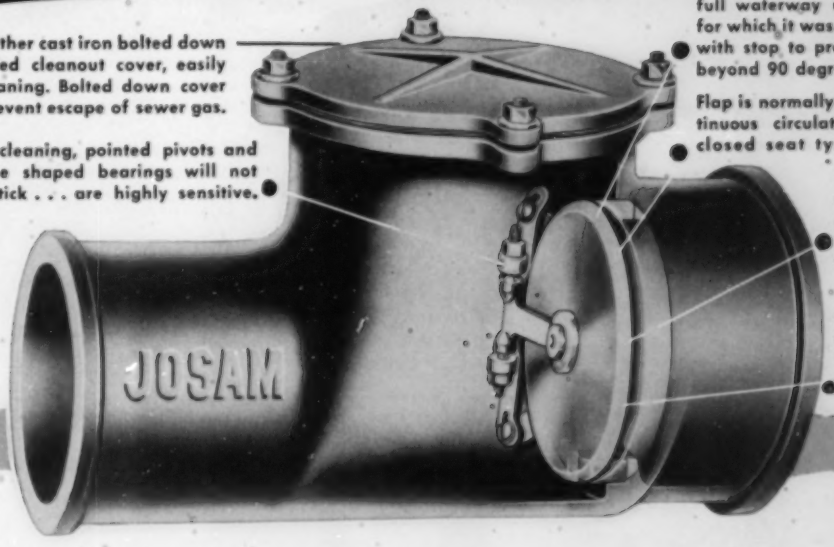

Furnished with either cast iron bolted down or brass threaded cleanout cover, easily removed for cleaning. Bolted down cover is gas tight to prevent escape of sewer gas.

Bronze, self-cleaning, pointed pivots and recessed cone shaped bearings will not corrode or stick . . . are highly sensitive.

Side-swing flap opens wide to allow full waterway up to size of pipe for which it was designed. Equipped with stop to prevent flap opening beyond 90 degrees.

Flap is normally open to allow continuous circulation, adjustable to closed seat type when desired.

Disc revolves, eliminating uneven wear, and is cleaned with each discharge of water.

Flap closes with slightest backflow, preventing entry of backwater into drain lines.

There'll be MUD in the basement of the finest home, store or building you plan... unless you provide proper backwater control. If the sewerage facilities of the community are not adequate to carry off the deluge of heavy rains and thaws, the water in the sewers will back up through drain lines and basement floor drains into the basement. Equipment and material stored in the basement will become water soaked—expensive repair and cleaning bills will result.

Guard against this ever happening to your homes or buildings by including a Josam Backwater Sewer Valve in every specification. It is positive-acting, trouble-proof, easy to install and the cost is so little compared with the protection it provides!

Send coupon for specifications, installation details, sizes and other helpful information!

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Please send me free folder on "Backwater Control"
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Shower Cabinet

DESIGN NO. 2000-C

The finest in shower cabinet design and construction, now again available for installation in bathrooms where the ultimate in luxury is desired.

Back wall panels are white vitreous porcelain enamel, glass panels set in solid brass chromium plated frame. Receptor deep type terrazzo generous size with overall dimensions 40"x40"x80". Architects, Builders and home owners will welcome back this Fiat shower cabinet that typifies luxury shower bathing equipment.

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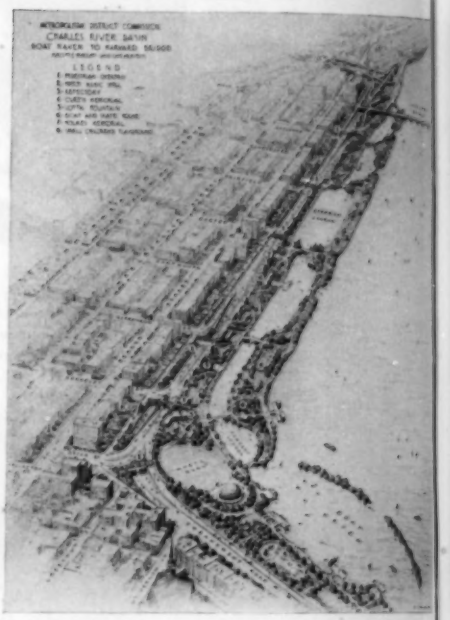
In Canada Fiat showers are manufactured by Porcelain and Metal Products, Ltd., Orillia, Ont.

THE RECORD REPORTS

(*Continued from page 20*)

of a fund of nearly $325,000 left in trust to the Buffalo Foundation by the late Col. Edward H. Moeller, Buffalo architect who died in 1948. The gift was entrusted to the foundation for the establishment of scholarships. The first allocations of funds have gone also to the Albright Art School, the Studio Theater and the Community Music School of Buffalo.



CHARLES RIVER BASIN PLANS

Construction of new recreational areas on the shores of the Charles River Basin is planned by the State of Massachusetts to replace those which will be lost with the building of the new Esplanade Highway, as directed by a recent act of the Commonwealth legislature.

The proposed replacements, which were formulated after a conference between Gov. Paul A. Dever, Commissioner William T. Morrissey, of the Metropolitan District Commission, and Arthur A. and Sidney N. Shurcliff, landscape architects, include a new Charles-bank center for the West End, complete with swimming pool and athletic fields; a canoeway for small boats; a new boat and skate house to replace those being razed for the highway and changes to the shore line between Harvard and Boston University bridges to provide over five acres of new park land. In addition 11 pedestrian overpasses over

(*Continued on page 154*)

NOW...in midget size

Sectional view showing bus in position
Feedin Box 2 or 3 pole
Plugin Outlets spaced on 20-inch centers
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Plugin Device 2 or 3 pole
End Closure

the NEW FA POWER PLUGIN

THE COMPACT *MIDGET SIZE* PLUGIN (FA) BUSDUCT

Designed for

50 AMP., 240 VOLT MAXIMUM FEEDER CAPACITY, AND ½ to 3 HP MOTORS

(7½ HP MAXIMUM WITH DUAL-ELEMENT FUSES)

The PLUG-IN convenience, flexibility and efficiency of Plugin (FA) Busduct is now available in *midget* size . . . 50 Amp., feeder capacity . . . for equipment requiring connections for ½ to 3 HP motors, 240 volts or less AC or DC . . . 7½ HP maximum, with dual element fuses.

(FA) POWER PLUGIN provides convenient plugin outlets all along the line. Approved by Underwriters' Laboratories, the duct is made in 5-foot and 10-foot sections with plugin outlets every 20 inches . . . additional outlets on special order. Special lengths are available for application on production benches and machines.

Midget PLUGIN UNITS, fitted with standard 30 Amp. capacity fuse connections, serve as excellent disconnect devices for the power feeder to the motor . . . permitting production machines to be moved in or out of the production line without slowing down or delaying plant production.

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You'll find much more information in our new Bulletin No. 703. We will gladly send it to you.

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There's more to it than good looks

Fabricated and erected by the Insulated Building Division of The Austin Company, Cleveland.

...These doors save money!

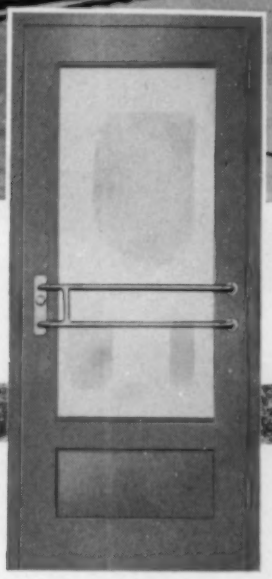
Even a close-up look at a Fenestra* Hollow Metal Door wouldn't reveal the fact that it saves money. It's neat and well-proportioned. Smoothly finished.

Sturdy, too . . . ready to take punishment without looking chewed and marred. Fenestra Doors can't warp or swell . . . always swing easily. And they're packed with insulation for quiet performance.

What keeps costs down? Standardization, for one thing. A system of stock sizes permits design flexibility, yet gives you the benefits of mass production. For example, one stock door can be used either right or left swing, swing-in or swing-out, with either metal or glass panel. You get selection. We get longer production runs to keep costs down.

Savings on installation add up to a tidy sum. Fenestra Metal Doors come to the job complete with frames and hardware that are pre-sized for each other—for quick assembly. All mortising, drilling, tapping and prime-painting are done at the factory.

IMMEDIATE DELIVERY. Fenestra Doors, including those with Underwriters' B Label, can be delivered from local stocks. Each will reach the job carefully wrapped to protect the finish. Call your Fenestra Representative (listed in your phone book), see Sweet's Architectural File (Section 15 a/7), or write to Detroit Steel Products Company, Dept. AR-10, 2252 East Grand Blvd., Detroit 11, Michigan. *Trademark



Standard entrance door, available with standard lock or with push-and-pull bars, as illustrated.

Standard swing and slide door, available with choice of hardware, with metal or glass panel.

Fenestra STANDARD HOLLOW METAL SWING AND SLIDE DOORS

Why so many hotel and restaurant men prefer

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*Textolite** TABLE TOPS

Hotel and restaurant men find General Electric Textolite plastics surfacing material ideal for table tops in both kitchen and dining rooms. This tough plastics surfacing stands up well as a utility surface in the kitchen. At the same time, its beauty (and there is a wide choice of handsome, exclusive patterns) matches and enhances the decor of dining rooms. Customers like G-E Textolite's velvet, glare-free finish; employees like its easy-to-clean surface; management likes it because it reduces decorating and maintenance costs.

Architects can capitalize upon the wide popularity of G-E Textolite plastics surfacing by specifying it in their plans; furniture manufacturers will find it helps to increase the sales appeal of their products.

G-E Textolite may be used any place where good looks must stand up under hard wear—table tops, counters, desks, bar tops, soda fountains, even walls and decorative paneling.

Find out how this beautiful, tough surfacing material can help you. Write for details to Section 11-10, Plastics Division, Chemical Department, General Electric Company, Pittsfield, Mass. Or, send the coupon for a free illustrated booklet which includes a pattern sheet of G-E Textolite table top designs in full color.

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CONSTRUCTION COST INDEXES — Labor and Materials

United States average 1926–1929 = 100

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corporation, from data compiled by E. H. Boeckh & Associates, Inc.

NEW YORK

Period	Residential		Apts., Hotels, Office Bldgs.	Commercial and Factory Buildings	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1925	121.5	122.8	111.4	113.3	110.3
1930	127.0	126.7	124.1	128.0	123.6
1935	93.8	91.3	104.7	108.5	105.5
1939	123.5	122.4	130.7	133.4	130.1
1940	126.3	125.1	132.2	135.1	131.4
1941	134.5	135.1	135.1	137.2	134.5
1942	139.1	140.7	137.9	139.3	137.1
1943	142.5	144.5	140.2	141.7	139.0
1944	153.1	154.3	149.6	152.6	149.6
1945	160.5	161.7	156.3	158.0	155.4
1946	181.8	182.4	177.2	179.0	174.8
1947	219.3	222.0	207.6	207.5	203.8
May 1949	241.2	238.2	242.3	245.3	238.9
June 1949	238.7	235.1	241.4	244.7	238.0
July 1949	236.6	232.9	240.4	243.9	237.0
	% increase over 1939				
July 1949	**91.9**	**90.3**	**83.9**	**82.8**	**82.2**

ATLANTA

Period	Residential		Apts., Hotels, Office Bldgs.	Commercial and Factory Buildings	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1925	86.4	85.0	88.6	92.5	83.4
1930	82.1	80.9	84.5	86.1	83.6
1935	72.3	67.9	84.0	87.1	85.1
1939	86.3	83.1	95.1	97.4	94.7
1940	91.0	89.0	96.9	98.5	97.5
1941	97.5	96.1	99.9	101.4	100.8
1942	102.8	102.5	104.4	104.9	105.1
1943	109.2	109.8	108.5	108.1	108.7
1944	123.2	124.5	117.3	117.2	118.2
1945	132.1	133.9	123.2	122.8	123.3
1946	148.1	149.2	136.8	136.4	135.1
1947	180.4	184.0	158.1	157.1	158.0
May 1949	194.8	193.9	186.8	187.9	180.5
June 1949	192.0	192.7	185.2	186.6	179.1
July 1949	183.6	183.5	177.5	178.0	174.3
	% increase over 1939				
July 1949	**112.7**	**120.8**	**86.6**	**82.8**	**84.1**

ST. LOUIS

Period	Residential		Apts., Hotels, Office Bldgs.	Commercial and Factory Buildings	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1925	118.6	118.4	116.3	118.1	114.4
1930	108.9	108.3	112.4	115.3	111.3
1935	95.1	90.1	104.1	108.3	105.4
1939	110.2	107.0	118.7	119.8	119.0
1940	112.6	110.1	119.3	120.3	119.4
1941	118.8	118.0	121.2	121.7	122.2
1942	124.5	123.3	126.9	128.6	126.9
1943	128.2	126.4	131.2	133.3	130.3
1944	138.4	138.4	135.7	136.7	136.6
1945	152.8	152.3	146.2	148.5	145.6
1946	167.1	167.4	159.1	161.1	158.1
1947	202.4	203.8	183.9	184.2	184.0
May 1949	222.2	222.1	211.7	213.3	212.6
June 1949	219.2	218.4	210.5	212.4	211.4
July 1949	215.9	214.5	210.3	212.3	211.2
	% increase over 1939				
July 1949	**95.9**	**100.5**	**77.2**	**77.2**	**77.5**

SAN FRANCISCO

Period	Residential		Apts., Hotels, Office Bldgs.	Commercial and Factory Buildings	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1925	91.0	86.5	99.5	102.1	98.0
1930	90.8	86.8	100.4	104.9	100.4
1935	89.5	84.5	96.4	103.7	99.7
1939	105.6	99.3	117.4	121.9	116.5
1940	106.4	101.2	116.3	120.1	115.5
1941	116.3	112.9	120.5	123.4	124.3
1942	123.6	120.1	127.5	129.3	130.8
1943	131.3	127.7	133.2	136.6	136.3
1944	139.4	137.1	139.4	142.0	142.4
1945	146.2	144.3	144.5	146.8	147.9
1946	159.7	157.5	157.9	159.3	160.0
1947	193.1	191.6	183.7	186.8	186.9
May 1949	212.5	207.4	212.5	217.5	215.9
June 1949	210.8	204.2	212.9	219.5	215.8
July 1949	206.7	199.3	211.4	218.5	214.2
	% increase over 1939				
July 1949	**95.7**	**100.7**	**80.1**	**79.2**	**83.9**

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926–29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926–29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear whenever changes are significant.

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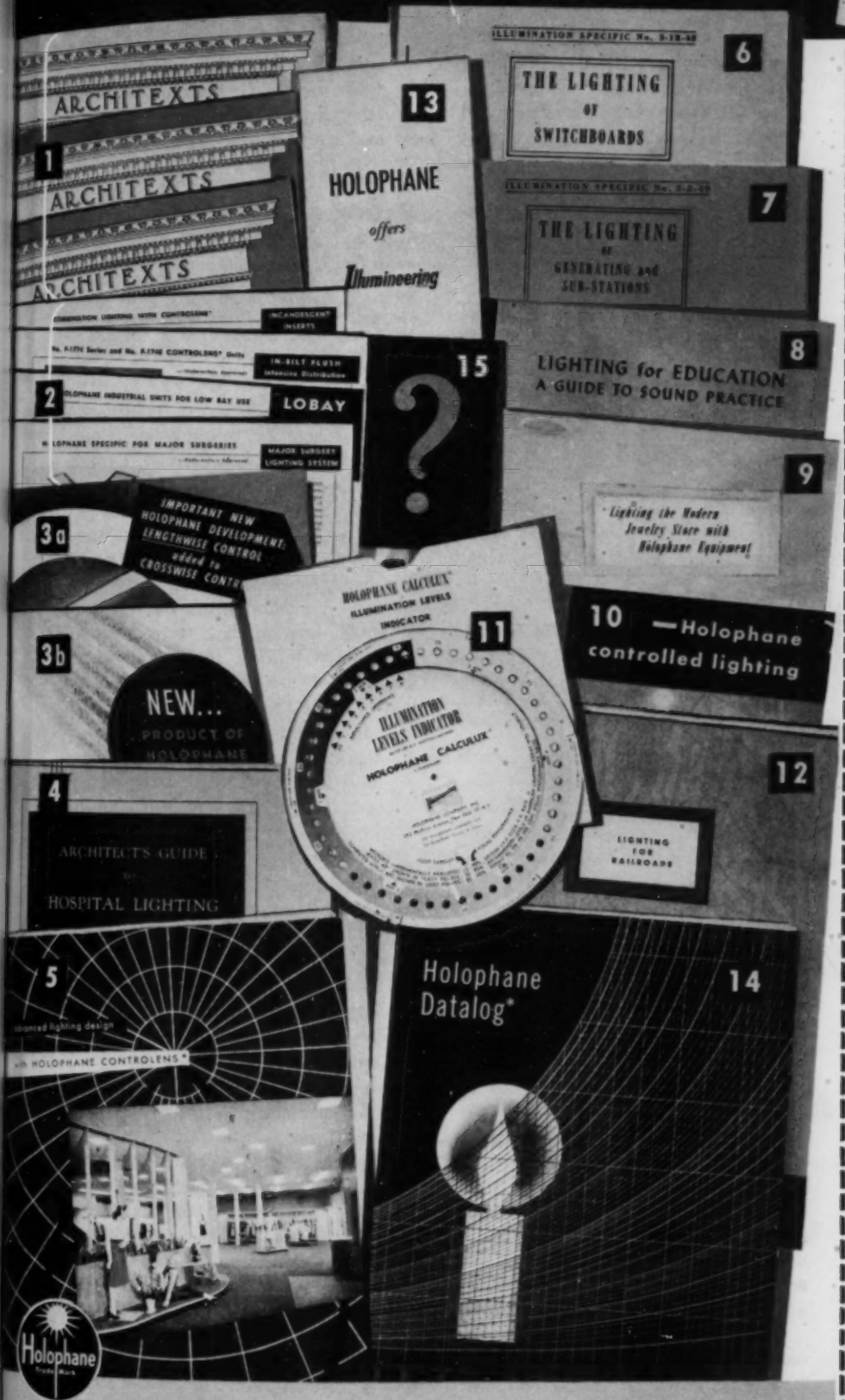

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REQUIRED READING

ARCHITECTURE FOR TODAY

Architecture and the Spirit of Man. By Joseph Hudnut. Harvard University Press (Cambridge 38, Mass.), 1949. 5½ by 8¼ in. 302 pp. $4.50.

"Since beauty in architecture consists of a harmony between the individual self and the qualities of buildings it follows that there could be no building which might not at some moment be judged beautiful; nor is there any formula, the self being so varied, uncertain and elusive, by which we may predetermine the nature of those buildings which fate may cover with that sudden and evanescent mantle."

In that one sentence Dean Hudnut sums up the theme of the two dozen essays which comprise this volume. Most of the papers have appeared in print before, a quarter of them in ARCHITECTURAL RECORD. All have as their central point the need for architecture to express the spirit of its time, to be *contemporary* in a very literal sense.

Dean Hudnut develops his theme for various types of building — university, church, house, hospital, etc. — finding in each type the human element playing its persistent part. With his usual whimsical humor he points up the sentimental reasons for style carry-overs such as the dormer window and the purely ornamental shutter. He can find no excuse at all for the dormer, but the shuttered window he considers "somewhat more practical since it provides the chink through which one may aim an arrow at a prowling Indian, should one appear on the lawns of Wellesley Hills or Newton Upper Falls; and yet the money spent each year in Boston for shutters which are never closed, plus the cost of keeping last year's shutters bright with paint — green, orange, or Williamsburg blue — would, if invested with the Shawmut National Bank at 1¾%, provide annual scholarships for 743 students at the Pawtucket Genealogical Seminary."

Progressing from consideration of buildings and building types, Dean Hudnut, in the second half of his book, takes a long and penetrating look at the city as it is today and as it could be tomorrow. Unlike most planners, the Dean presents no brief for decentralization. "We are held in the city," he says, "neither by pleasure nor by economic necessity but by a hunger which transcends both practical and sensuous experience, a hunger seldom revealed by appearances, seldom acknowledged in our consciousness. We are held in the city by our need of a collective life; by our need of belonging and sharing; by our need of that direction and frame which our individual lives gain from a larger life lived together." Closely integrated neighborhoods, self-sufficient and friendly, independent and yet a part of the whole, he thinks, should be our goal. And for the same reason he "would return the housing project to the streets of the city . . . and to the city's institutions," placing at its center church, theater and school, and making of it a neighborhood instead of an isolated and enclosed group of residential units quite apart from the life of the city.

This is a thought-provoking book, one which will appeal to student and layman almost as much as it will to architect and city planner. Dean Hudnut's philosophy of architecture is contagious, particularly when it is presented, as it always is, in delightful prose sparked generously with humor and a dry insight into human nature.

THAT MAN, THE ARCHITECT

How to Live with Your Architect. By Victor Gruen, A.I.A. Store Modernization Institute (40 E. 49th St., New York 17, N. Y.), 1949. 5¼ by 8¼ in. 32 pp., illus. $1.50.

In its own whimsical way, this small booklet is a classic. As its title implies, it is written to explain to the general public just what it is an architect does for his client, and how he does it. Actually, of course, there should be no need for such an explanation any more than there should be for the functions of the doctor, lawyer or any other professional man. And that is exactly the premise on which Mr. Gruen has based his argument. "The architect is a professional man like the physician or the lawyer," he says. "Like they — he had to go through many years of study, years of apprenticeship, examinations — until the big day came when he became an architect. Still, his clients don't quite see him the same way they see their doctor. They would never dream of directing their physician as to how, exactly, they would like to have their appendix removed. . . ."

Knowing that a paragraph such as the one just quoted never would be read if it were presented as straight text, Mr. Gruen has made this primarily a book of drawings, with his entire text run as short captions. He used seven drawings, for example, to get those four sentences across. The drawings are clever and eye-catching; half a dozen of the more provocative of them have been used to excellent effect on the front cover to lure the unsuspecting client into a perusal of the volume. Nor is the client the only one to whom the drawings will appeal — the architect will chickle delightedly at them. Maybe Mr. Gruen some day will give the client a reciprocating chuckle by producing a similar treatise entitled "How to Live with Your Client."

A LOOK AT PUBLIC HOUSING

Large-Scale Housing in New York: Monograph No. 1, The Significance of the Work of the New York City Housing Authority. By the Committee on Housing, New York Chapter, American Institute of Architects. N. Y. Chapter, A.I.A. (115 E. 40th St., New York 16, N. Y.), 1949. 8½ by 11 in. 130 pp., illus. $2.50.

The recommendations and analyses presented here by the Housing Committee of the New York Chapter, A.I.A., are the result of the committee's two years of study of large-scale housing in New York City, with emphasis on the work of the Housing Authority. The report is not concerned, happily, with the eternal arguments about the wisdom of public housing, but, as committee chairman Arthur C. Holden states in his letter of transmittal, has been limited in scope "to an evaluation of the accomplishments of the Authority solely on the basis of the living quarters provided."

What the committee wanted to find out was how well public housing is satisfying the physical needs of family living and how well large-scale housing is satisfying the needs of community living. As a result of its study, Mr. Holden says, the committee "is convinced that public housing cannot be carried on indefinitely under the existing policies of governmental expenditure and subsidy. For this reason it recommends that architects support a movement for searching investigation directed towards developing an improved technique of long term credit, investment and banking."

On the whole, the committee is well pleased with the standards set by the New York Housing Authority. The Authority, the report states, has set standards "which have begun to create an understanding on the part of the public of the better type of city living that is made possible by coordinated,

(Continued on page 30)

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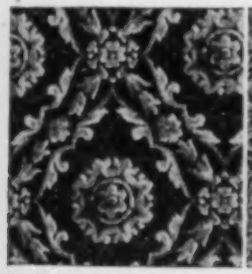

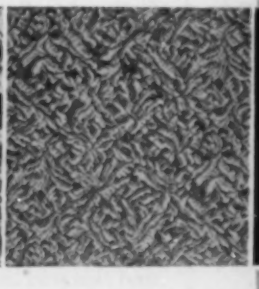

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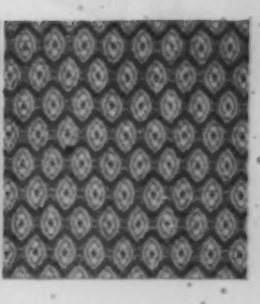

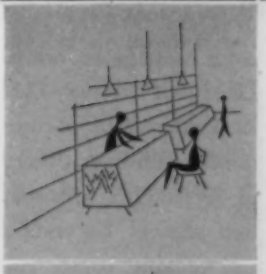

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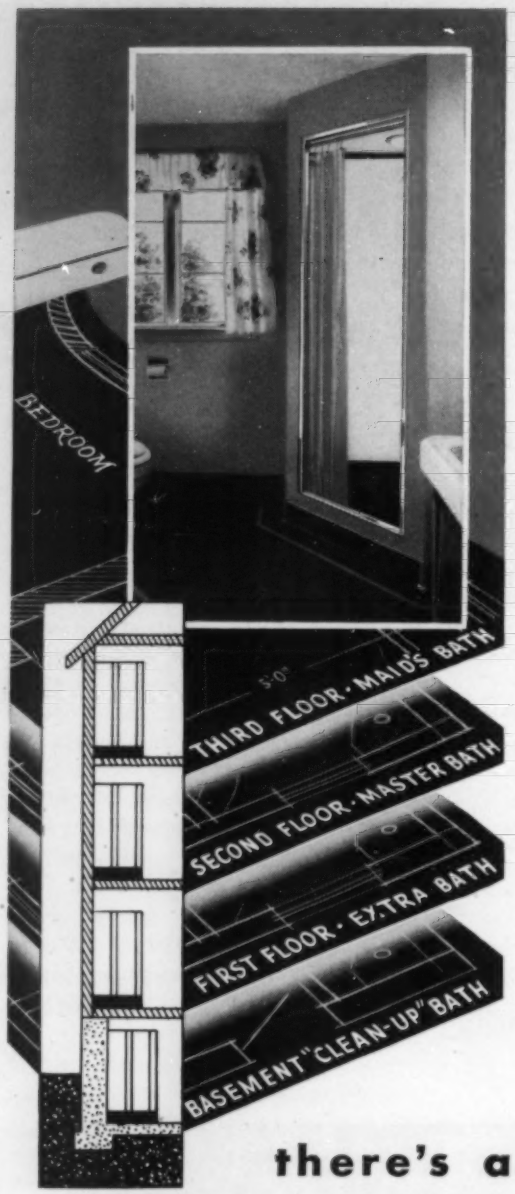

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REQUIRED READING

(*Continued from page 28*)

large-scale design." Where the Authority has been weak, in the committee's opinion, is in realizing esthetic possibilities (it has set a "bad example of barrenness and barracks-like appearance," the report says), in providing community centers and social rooms of desirable standards, and in coordinating its projects with the planning of the city as a whole.

This report deserves, and undoubtedly will receive, careful study on the part of architects engaged in large-scale housing design. Its analyses are well presented and backed up by numerous photos, plans and site plans. Its conclusions are grouped for convenient reference. And its usefulness is augmented by two appendices, one summarizing 12 reports on public housing, the other indexing the New York Housing Authority projects and listing for each the architects and their associates.

DESIGNS FROM CANADA

Canadian Designs for Everyday Use. The National Gallery of Canada (Ottawa), 1949. 8½ by 11 in. 52 pp., illus. 50 cents.

Industrial design in Canada undoubtedly has been stimulated by the Design Index established two years ago by the National Gallery of Canada. The index is qualitative and photographic, and includes only those items specifically selected for it by a committee of designers and architects. From the indexed items the Gallery now has taken a representative group which it here presents in catalog form.

American designers and architects will find this selection of Canadian design of real interest. In many instances, as would be expected, the items bear a distinct family resemblance to similar objects of American design; in others the British strain predominates. In all, however, there is a directness and simplicity which is definitely pleasing.

The items indexed by the Gallery were chosen only if they met certain rigid requirements which included: suitability of form to function; maximum simplicity of design; elimination of meaningless ornament; mechanical efficiency; durability and safety. Only original Canadian designs were considered — i.e., designs originated completely in Canada, by Canadians.

ARCHITECTURAL

RECORD

IN TRANSITION

It is apparent that architecture is in a transitional phase. For many years it has been struggling to evolve an expression characteristic of the contemporary world. More recently there has been an attempt to appraise the success of this effort. Has the movement progressed rationally, or has it gone too far off the track? Has it found a new beauty, or lost the common touch? What direction will development now take? It is hardly necessary to debate any longer the merit of the functional plan versus that of facade architecture. As a premise this is reasonably well established, yet architects expect further pursuit of its implications.

In these transitional times there are other questions that beset the architect: what is the new relationship with engineers? with manufacturers of the new materials? and with the many other activities that comprise the complex art of building? The rapid growth of technology has increased greatly the materials and methods available for accomplishing our building programs. It has expanded the scope so much that no individual is capable of visualizing the range of possibilities. In order to realize the latent potentialities of modern construction techniques, the highest degree of understanding and teamwork must prevail between architect and engineer.

At this time when so much fermentation is taking place in architectural thinking both as an art and as a science, ARCHITECTURAL RECORD is especially aware of its responsibility to the profession to report developments candidly and objectively, and to render those informational services most likely to facilitate the work of the architect and engineer.

Harold D. Hauf

EDITOR

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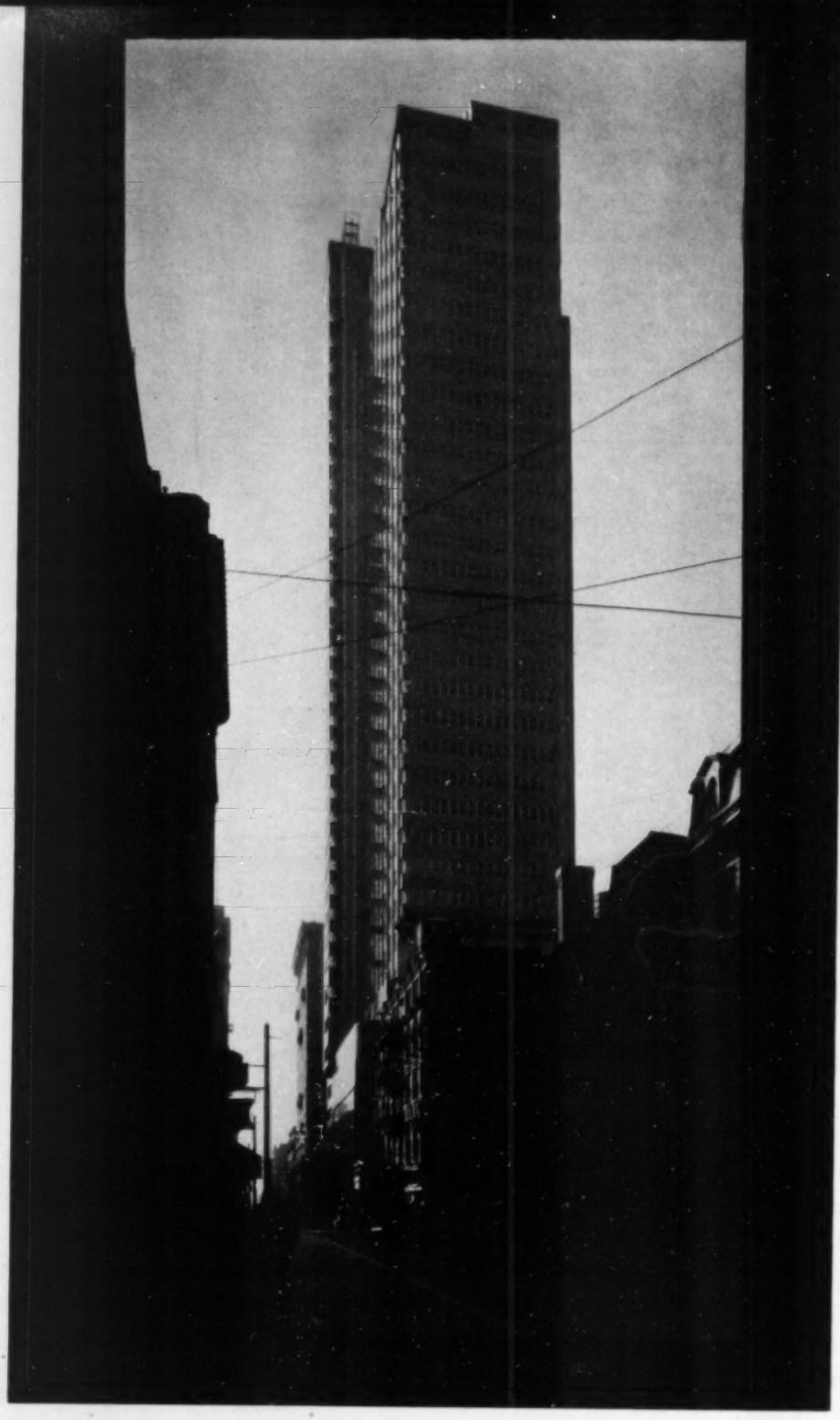


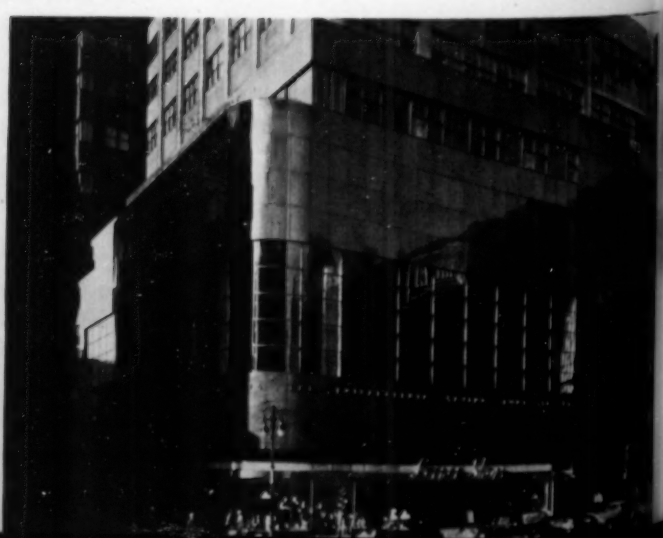
Ph. B. Wallace Photo

THE PHILADELPHIA

George Howe, writing from the American Academy in Rome—a post he is soon to relinquish, says: ". . . As the president of the Society at the time of building made me guarantee on my word of honor that we had designed the building in the interests of the bank and not of our personal reputations among the ivory tower boys, I take a personal and particular interest in its success. . . ." Photographs, left: construction nearly complete in 1932. Below, street façades show little change; note modern automobiles in 1949 view. Facing page, main banking room shows greatest change, in lighting and counters, required by tremendous growth in bank's business

1932 **1949**

Joseph Molitor Photo



Howe and Lescaze, Architects

SAVING FUND SOCIETY BUILDING: A RE-APPRAISAL

In August, 1932, the Philadelphia Saving Fund Society opened its new branch bank and office building at 12th and Market Streets. Almost immediately the building won national and international acclaim; it has been pointed to as a thorough fusing of structure, materials and equipment; hundreds of high school and college students still visit it annually. Does the building live up to this succes d'estime? The seventeen years since its completion afford time enough for an honest re-evaluation based on the experience of owner and tenants as well as our own more mature critical attitude toward non-traditional architecture.

THE OLD BEAUTY

By Frederick Gutheim

FROM along the Schuylkill, through the web of overhead wires, you can see it, still the biggest and proudest thing in Philadelphia, now almost twenty years since it was born on the drafting table in the office of Howe and Lescaze. A fretted white tower announces with authority **PSFS**, spelled out at night in red neon, still commanding the skyline.

A cynic might very well say that the last thing built always commands the skyline, and nothing much of consequence, admittedly, has been built in downtown Philadelphia since the Society erected its skyscraper in the depression days of 1932. But hold! Have the last twenty years produced anything in the way of a tall building — except for the United Nations secretariat, now a promise in steel — that provides the same functional satisfaction or as much eye food? If you had to pick the one American skyscraper, this would have to be it.

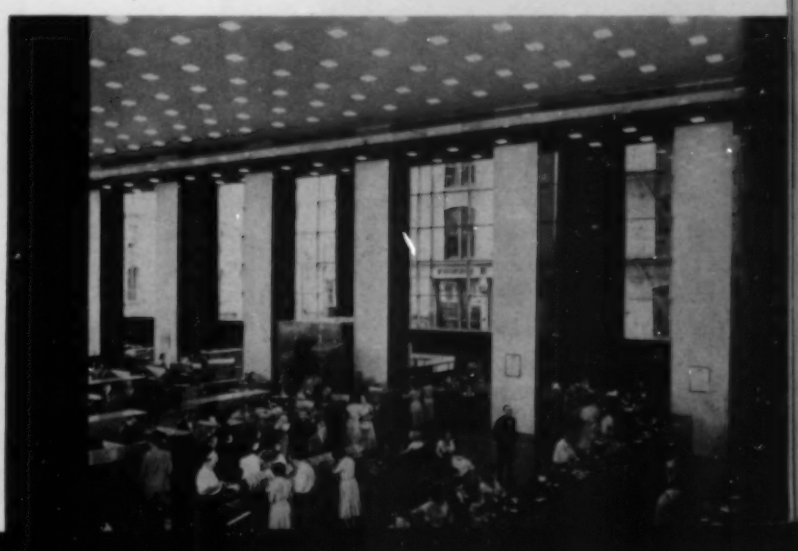
When people have finished talking about verticals in the Daily News Building, horizontals in the McGraw-Hill Building, the planning virtues of Rockefeller Center, or the simple height of the Empire State — when all this has been done, and you come down to the fundamentals of good building and design — there is PSFS. Today it is still a satisfying building, to its occupants, to the public, and to the architecturally aware visitor. It does not invite comparison. It still has an excitement to communicate, a few surprises one has forgotten since the last visit, against a pleasant sense of finding things as satisfactory as one remembered them. Most of all, the building has that unique combination of boldness, of rugged strength approaching ugliness that was Lescaze's polytechnic contribution, and of richness, luxury and refinement approaching over-refinement that was Howe's.

You admire it still, although the building belongs in the awkward age. Not new enough to be contemporary, but not old enough to have become a readily placed historical monument, it is aging gracefully. That fascinating miraculous preservation is part of its charm. There was an architectural wisecrack contemporary with the building of PSFS, calculated to jar the exponent of pure functionalism: "Yes, but will it make a good ruin?" It has become almost possible to answer that one. We can see that a modern building does not age in the same way a traditional building does. Modern materials — and double entry bookkeeping, perhaps — assure that in age the modern building will have a special charm of its own that we have not known before.

At first you think that jaunty ageless, frightening atmosphere, a little on the embalmed side, is due chiefly

Dooner Photo — 1932

1949 — Joseph Molitor Photo



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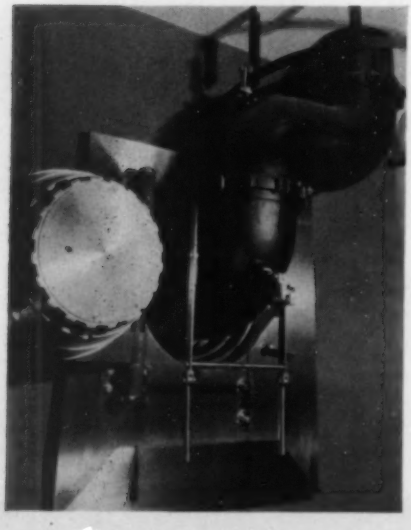
Entrance to second-floor bank: the simple doorway hardly prepares one for the monumental stair hall. Stairs begin so close to entrance that incoming customers automatically hurry up. Facing page, top and bottom: comparisons, main banking room. Number of customers' desks substantially increased; tellers' windows doubled; and local lamps eliminated from counters to make room for the machines required to accommodate increased business

Steiner Photo

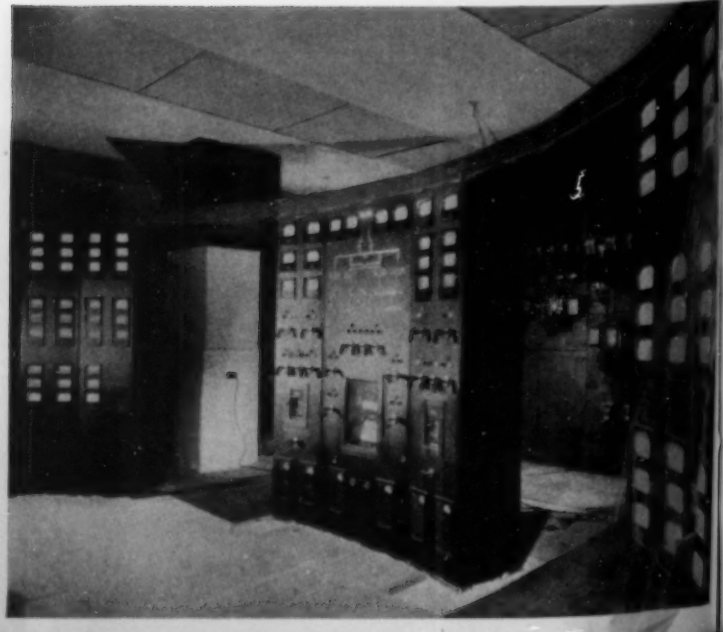
Richard Dooner Photo



Steiner and Nyholm

to the extraordinarily good maintenance the building receives. Then you think it derives from the marble, glass, stainless steel, copper and bronze, the whole battery of ageless, and nothing but ageless, materials that have gone into it. The building, piece by piece, might just as well have been built yesterday. But obviously, it wasn't.

What has aged is not the building but the style. With-



Entire building is air-conditioned; to this, plus efficient maintenance, is attributed low cost of upkeep. Above, duct supplies conditioned air to vault, pivots out of way so door can be locked at night. Air-conditioning and good office-floor design have consistently attracted tenants although building is not in Philadelphia's financial district. Right, remote control board for electrical system, (C. D. Fawcett, designer). Incoming high voltage is stepped down for separate light and power circuits, so interconnected that one may take both loads if the other fails

Richard Dooner Photo

1932

1949

Joseph Molitor Photo

out even entering you see the enormous curved corner, the building's principal label of association with the modern movement of the late twenties and early thirties. Critics were not lacking, even at that time, to point out that the corner destroyed the sense of volume, but it took subsequent excesses and corruptions to kill off this cliché simply by making it tiresome. Anyhow, there it is, unarguable evidence of the period.

Inside, it is still what Frank Lloyd Wright denounced as "the cardboard box;" inside you are even more conscious of style. The monochrome interior emphasizes what must have been, twenty years ago, new and daring structural forms; the design proclaims its affinity with the T-square and the layout artist's pad. There is a strong flavor of typography. And there is a faint formaldehyde reminiscence of buildings and sketches

1932

1949

Joseph Molitor Photo

UNIVERSITY OF MICHIGAN LIBRARIES

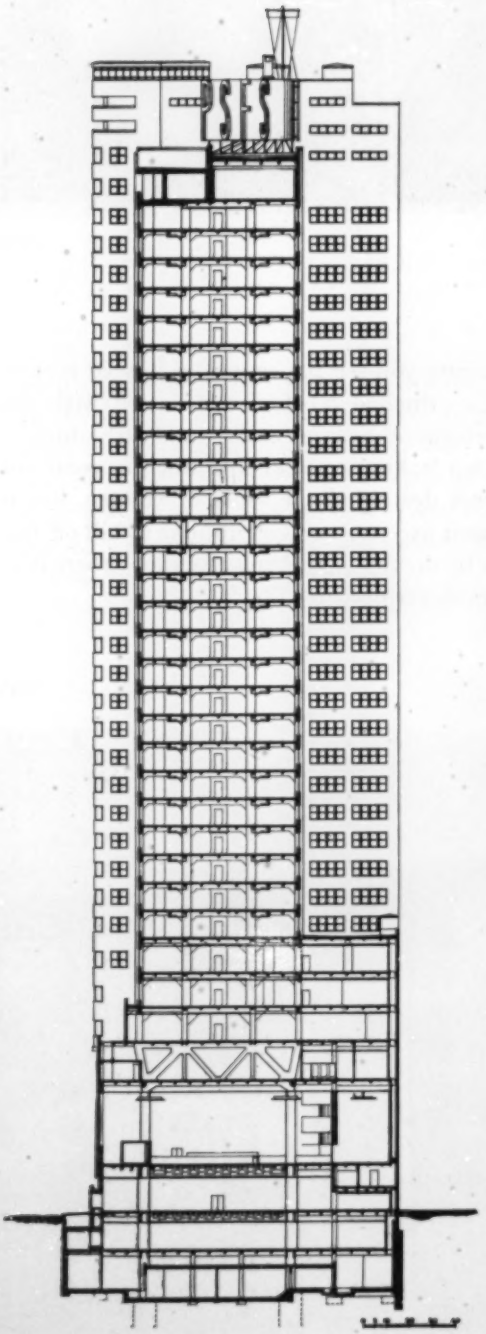
Joseph Molitor Photo

Philadelphia's skyline shows little change except for television masts, one of them atop PSFS. Though not in the financial district, PSFS office space has

of buildings seen in books, not of buildings seen as buildings. Was this, perhaps, a paper architecture expressing a wistfulness ingrained in the modern movement, with its many unbuilt projects and its emphasis on theory?

These characteristics, not unique in PSFS, are difficulties of that right-angled age into which it was born; nor are these stylistic details of cubism obtrusive. You think of them only when you find the building eluding criticism by explaining politely that it was not born yesterday. You could even say that no building twenty years old can with decency seem to have been born yesterday.

From the time a building is completed its destruction begins. This change the unadulterated functionalists of the twenties denied. They could not see that closely reasoned designs would grow out of date as there came change in the human needs they were designed to meet. Consider, for example, that the PSFS building, first



Twentieth floor: mechanical equipment, including air-conditioning for offices.

Third floor truss space: air-conditioners for bank. Store conditioners are in basement.

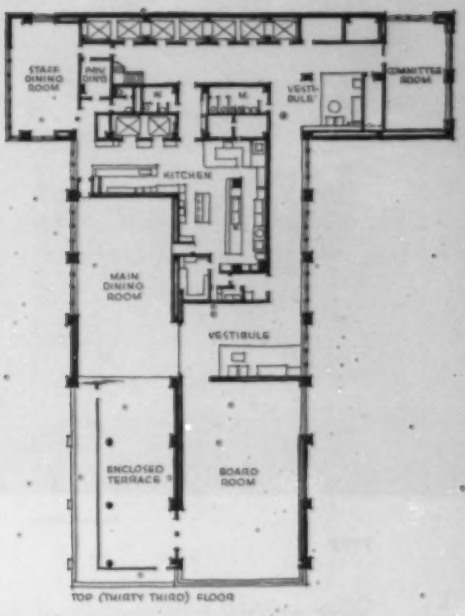
1949. *Building originally provided for growth in nearly every department: of the more-than-enough coupon booths (left) initially installed one row was dismantled and later re-installed. Vault (right) had room for greatly increased number of safe deposit boxes*

Steiner Photo

Joseph Molitor Photo

Richard Dooner Photo

been fully rented for years, thanks to management, equipment, planning, "style".

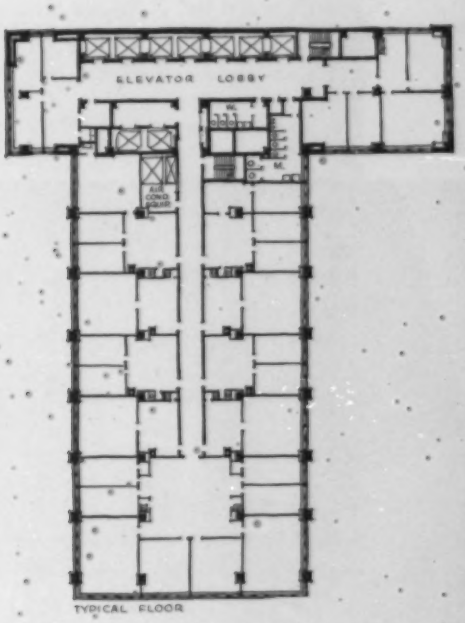


TOP (THIRTY THIRD) FLOOR

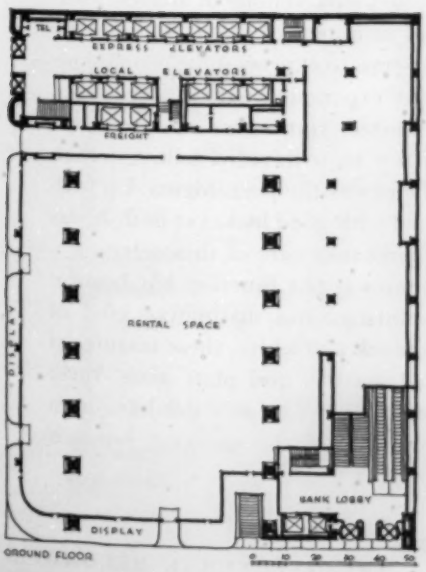
thought of as a branch, is now the headquarters of the bank; that since 1933 traffic through the main banking rooms has about doubled. It would have been astonishing if these changes had not made necessary corresponding changes in the design of the building, invalidating the doctrine of extreme functionalism, urging a greater flexibility and more recognition of changing needs.

Yes, a series of changes, undertaken in the names of progress and of maintenance, begins to take place in a building from the moment it is occupied. The process begins most easily with decoration and other elusive details. In older buildings it spreads to store fronts, lighting fixtures, elevator cabs, lobbies, corridors, and their very facades. Advanced stages are signalized by major reconstructions. Hardly one of these individual changes can be objected to with any force, but their cumulative effect leads to anonymity.

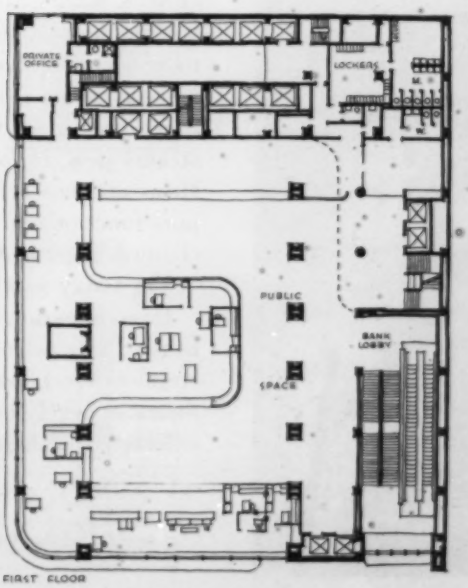
In PSFS the process starts with the main banking room, which originally took the appearance of a cube,



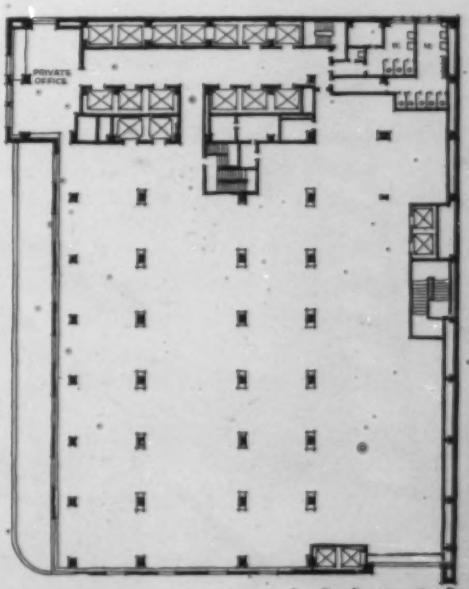
TYPICAL FLOOR



GROUND FLOOR



FIRST FLOOR



THIRD FLOOR

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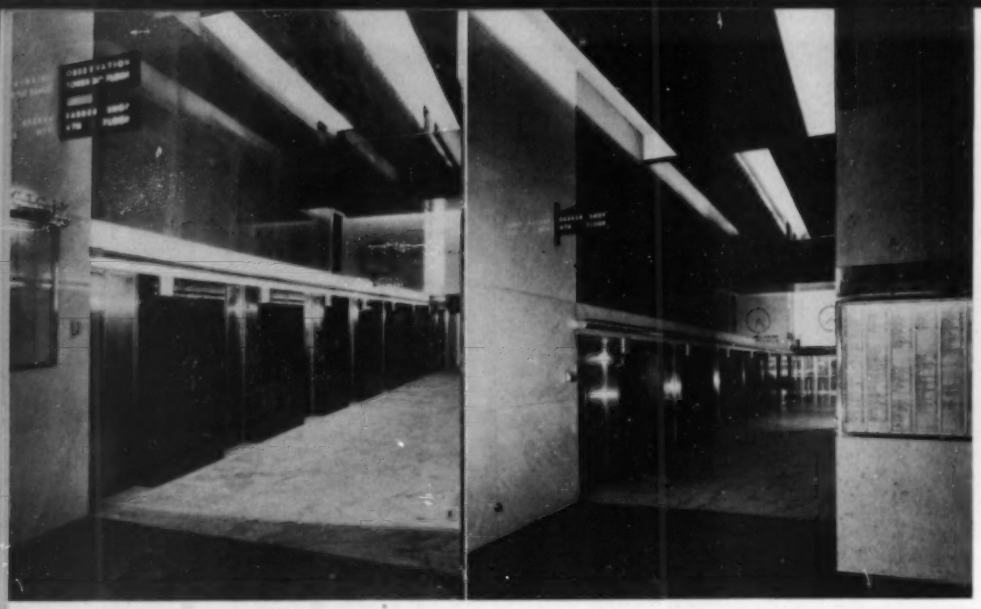


Steiner Photo

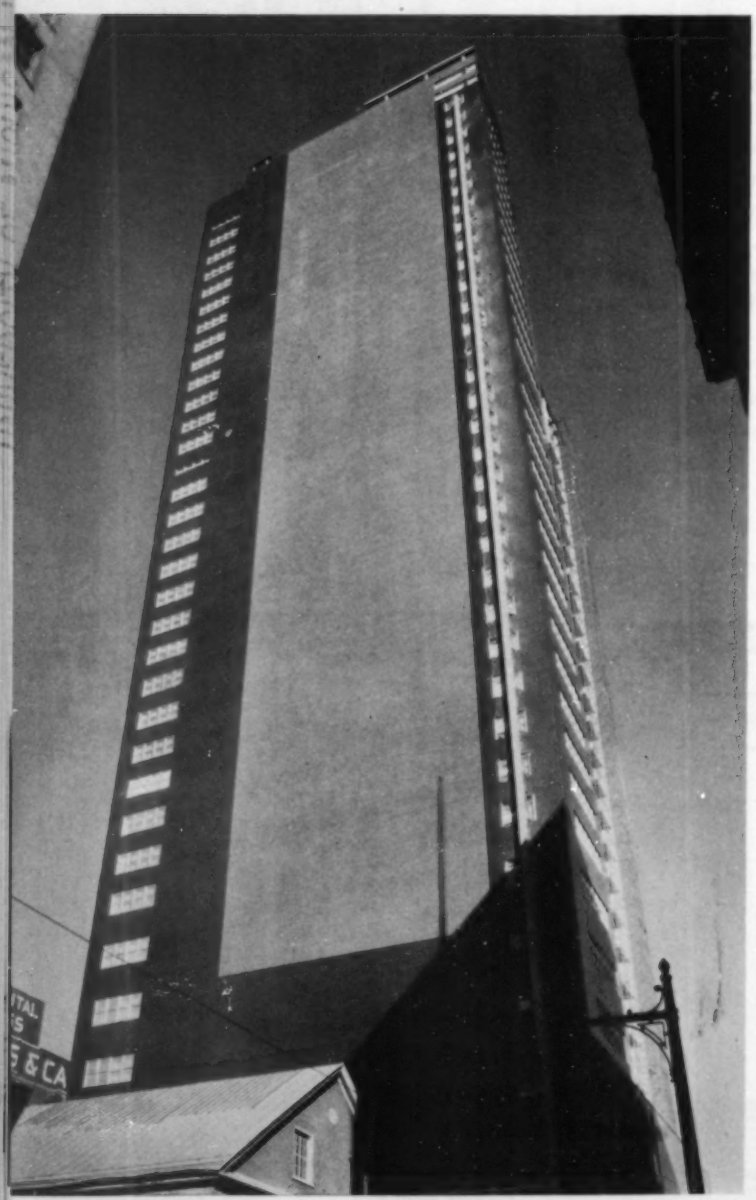
1932

Joseph Molitor Photo

1949

Office building elevator lobby: directory at left caused traffic jam; moving it to alcove at right eliminated crowding. Typical upper floor corridor (right) has black marble wainscot, reducing maintenance. Thanks partly to air-conditioning, plaster above marble has required repainting only at infrequent intervals

Ph. B. Wallace Photo



each side with its own character: now glass, now marble, now white, now black, now hard, now soft. The recently installed lighting changes that conception. So does the substitution for the original white nubbly textured curtain that covered nearly the whole of the room's east wall of a new curtain in a color called burgundy.

The catalog of change might be expanded. It leads squarely into questions which deserve full exploration, for which there unfortunately is not space here: How far may the architect go in translating into rigid form the fluid function at the moment of design? What is the responsibility of an owner for his work of art?

The PSFS building is our most charming skyscraper. It has, I insist, style. That style, integral throughout the building, can be tampered with only at the risk of destroying the building's chief distinguishing features. Its handsome directors' rooms on the top floor, with their views over the city and its two rivers that took the breath of the United Nations Headquarters Site Commission when they visited Philadelphia, are designed, if you please, in browns. Its chief room is a study in black and white. Its corridors are cleanly designed, sharply developed in light and shadow, boldly composed in squares and primary colors. These are the details that decide everything in the building's appearance.

If I may borrow for the heading of this article the title of Miss Willa Cather's last slim volume of stories, without her suggestion that in a gentler day it was enough to be beautiful, it may serve to express some conclusions we may draw from our experience with PSFS. When functionalism in the United States was raw, red, and steamy-new, it found few more devoted followers than Howe and Lescaze. Theirs was the pure dogma. Up with pure function and to hell with good looks; at best, it was claimed, good looks would take care of themselves.

Yet today what remains is not function but beauty.

It is a curious, haunting, and distinctive kind of beauty, this palette of black and white, these textures of stainless steel, polished marble, and plate glass, these forms so purely cubistic. The effect may not have been calculated, although one doubts the assertion, but it is

Joseph Molitor Photo

1949 *Typical rentable office space* 1932

consistent beyond accident. It is not what one would aspire to today, but it is what one is glad someone once aspired to and succeeded in creating.

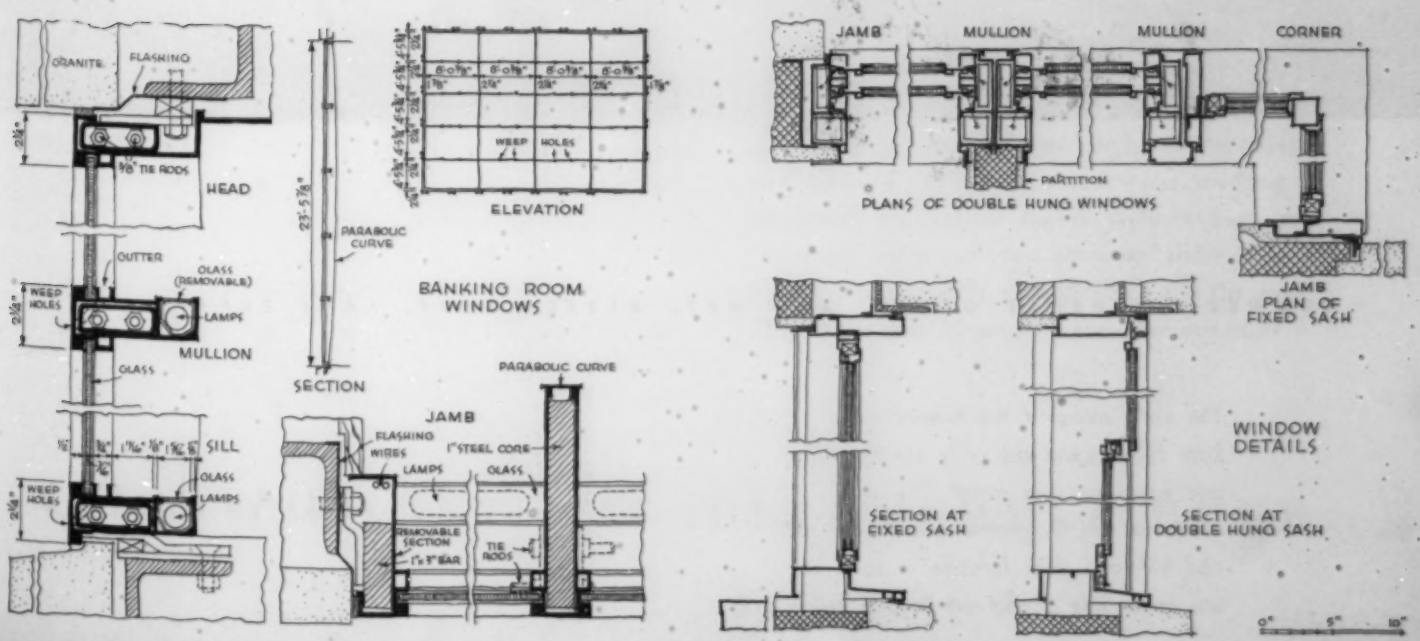
PLANNING, STRUCTURE, MATERIALS, EQUIPMENT

Inevitably the building has undergone the changes of which Frederick Gutheim writes, many of them because the bank's business has grown; since 1933 daily

(*Continued on page 180*)

Office floors: location of columns, plumbing, etc. is such that an average tenant can be accommodated in 15 to 25% less space than in other Philadelphia buildings. Stainless steel window sills and radiator covers have right-angled profile and square corners for durability and to simplify the work of fitting partitions for tenant changes. Due to air conditioning, windows are locked except when being cleaned. Tenants have always accepted this without protest.

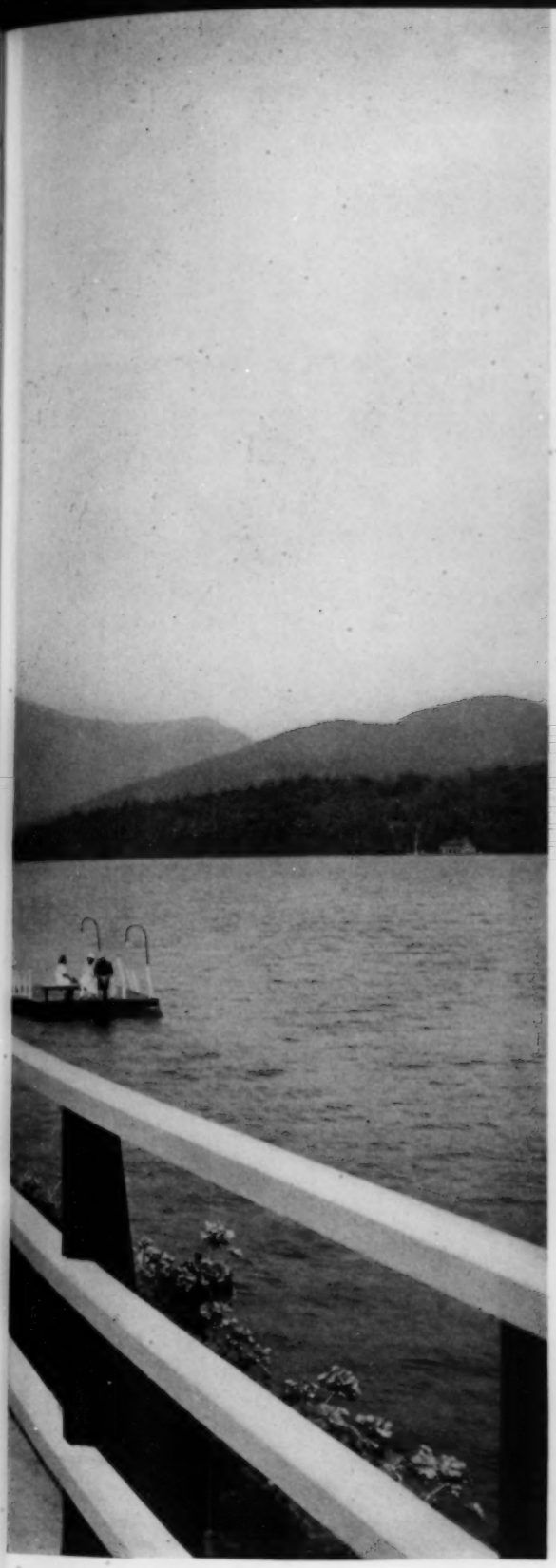
Joseph Molitor Photo



SUMMER RESIDENCE OF MR. AND MRS. ALBERT ROSE, LAKE PLACID, N Y.

The vivid colors of the exterior make the Rose house stand out gaily against water and mountains (see cover). The walls are black, set off by scarlet and yellow rail and trim and deck furniture in same colors; under side of roof overhang is yellow

BOATHOUSE



Kodachrome on Cover and photographs this page by Damora

Kahn & Jacobs

Architects

IF the chief purpose of a summer home is conceded to be provision for the maximum enjoyment of sun, fresh air, and relaxation from winter restraints, then this unusual Lake Placid residence is tops. Built over a boathouse, it extends 14 ft. out from shore; from its broad deck and most of its rooms land is visible only across water, creating a shipboard atmosphere highly conducive to relaxation. Continuous glass areas and sliding doors flood the large rooms with sunshine and the good Adirondack air. Mountains and lake are more a

CONVERTED INTO AN IDEAL SUMMER HOME

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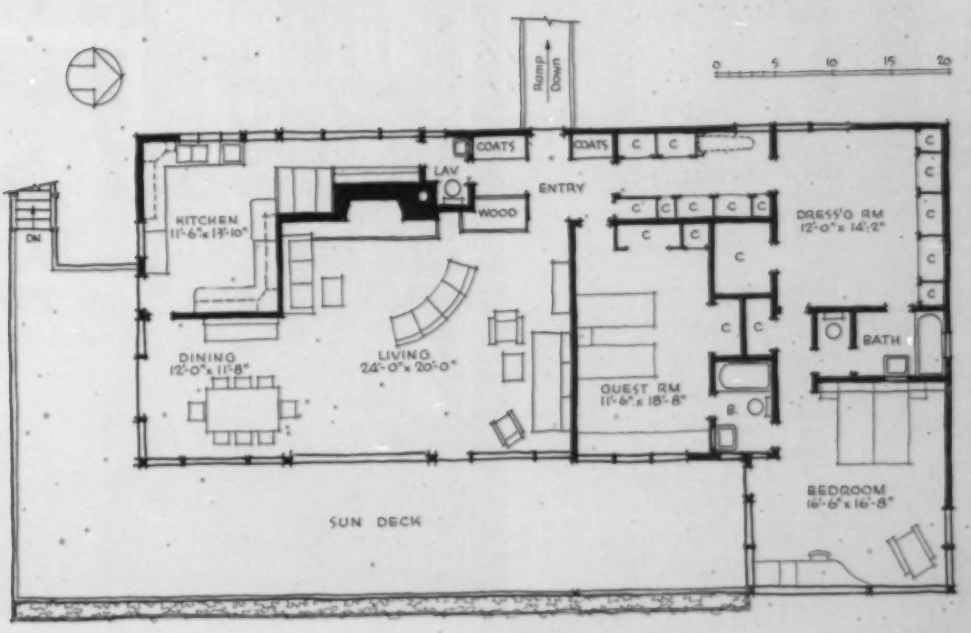
Damora

part of the house than are its foundations.

In a way all of this was a happy accident. The boathouse a few years ago was just a vital front door to the island home of Mr. and Mrs. Rose. Through it flowed supplies and guests transported from the mainland by boat. The residence itself was up the hill, deep in the woods, cut off from view and sun. Then came a fire, and the boathouse was all that was left. The owners immediately decided to rebuild on the same site, and called in Architect Robert Allan Jacobs. This was in the days of priorities and unavailable materials.



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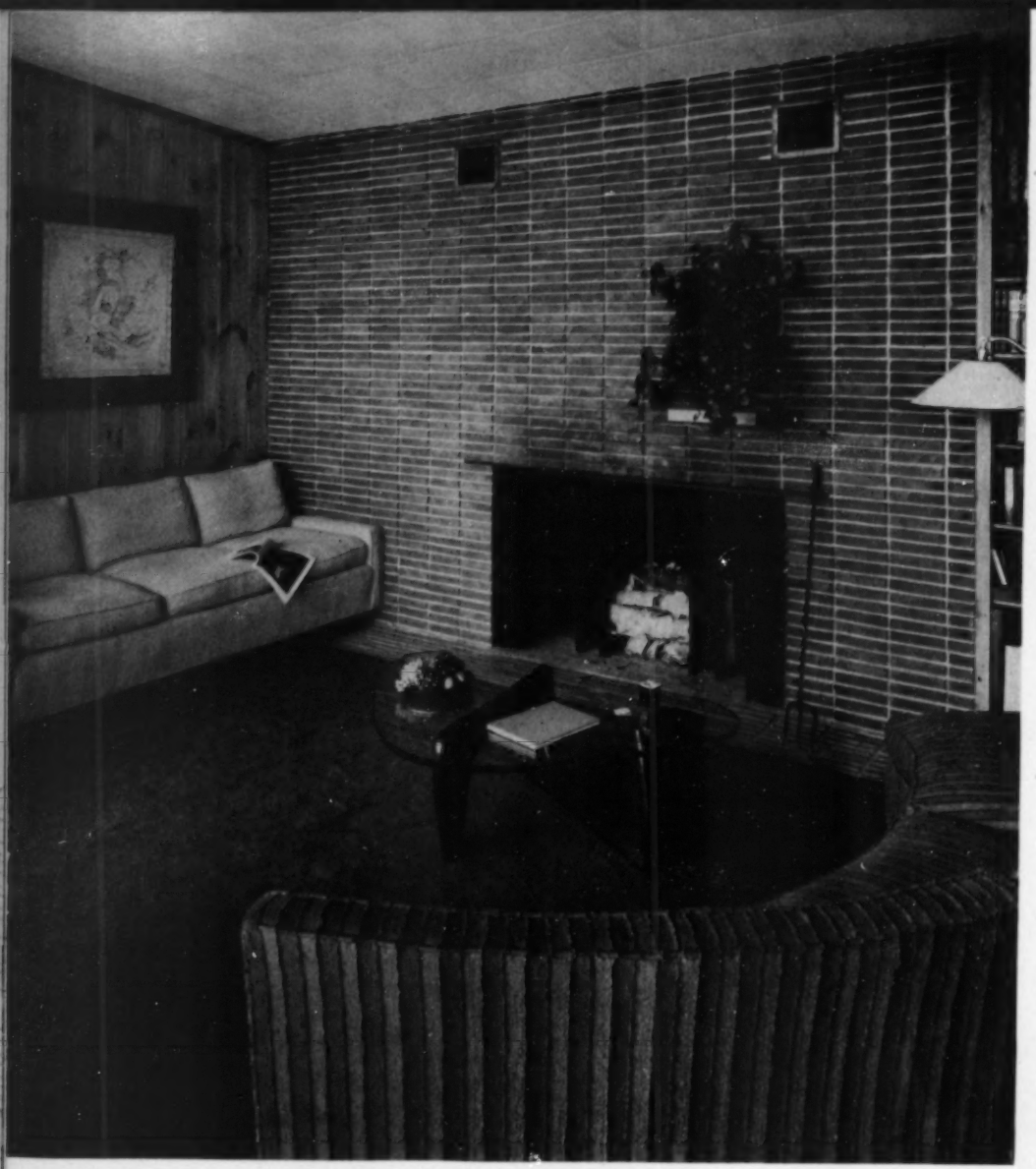
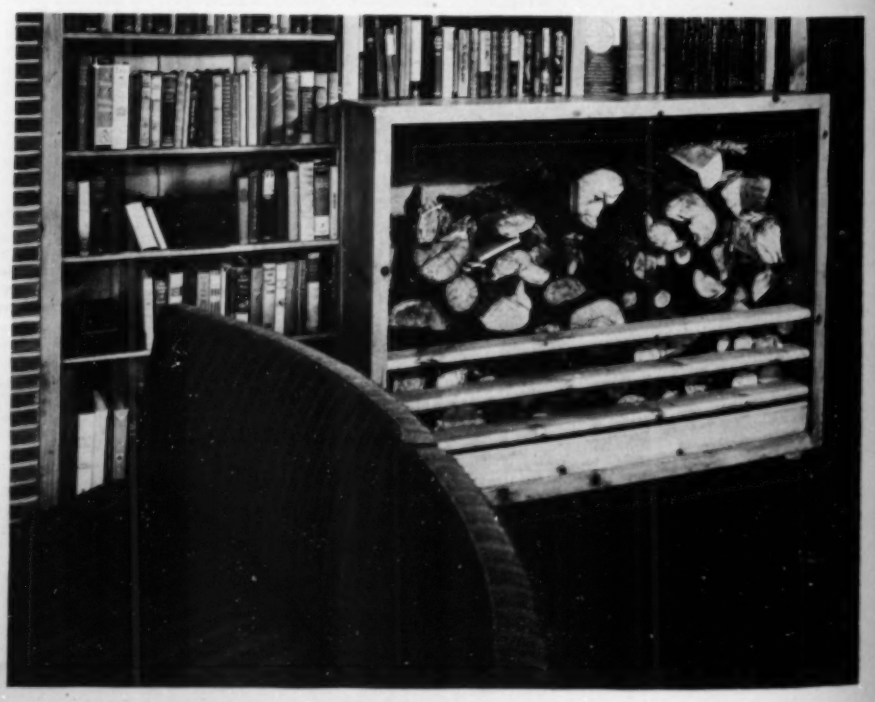


The living room is carpeted in coral, with the same color used for the semi-circular couch. Ceiling and long couch are yellow, furniture is black or dark brown. Walls are knotty pine, fireplace wall is coral brick. The master bedroom (opposite page) is predominantly yellow and white



so Mr. Jacobs suggested as a temporary measure that the boathouse be remodeled to provide living quarters for the family. The results met the owners' needs so exactly that all plans for a larger and separate house were abandoned.

Since the existing building measured 32 by 70 ft. and already had a sun deck, it required no expansion whatever. Mr. Jacobs simply added a second story containing a living room, two bed-

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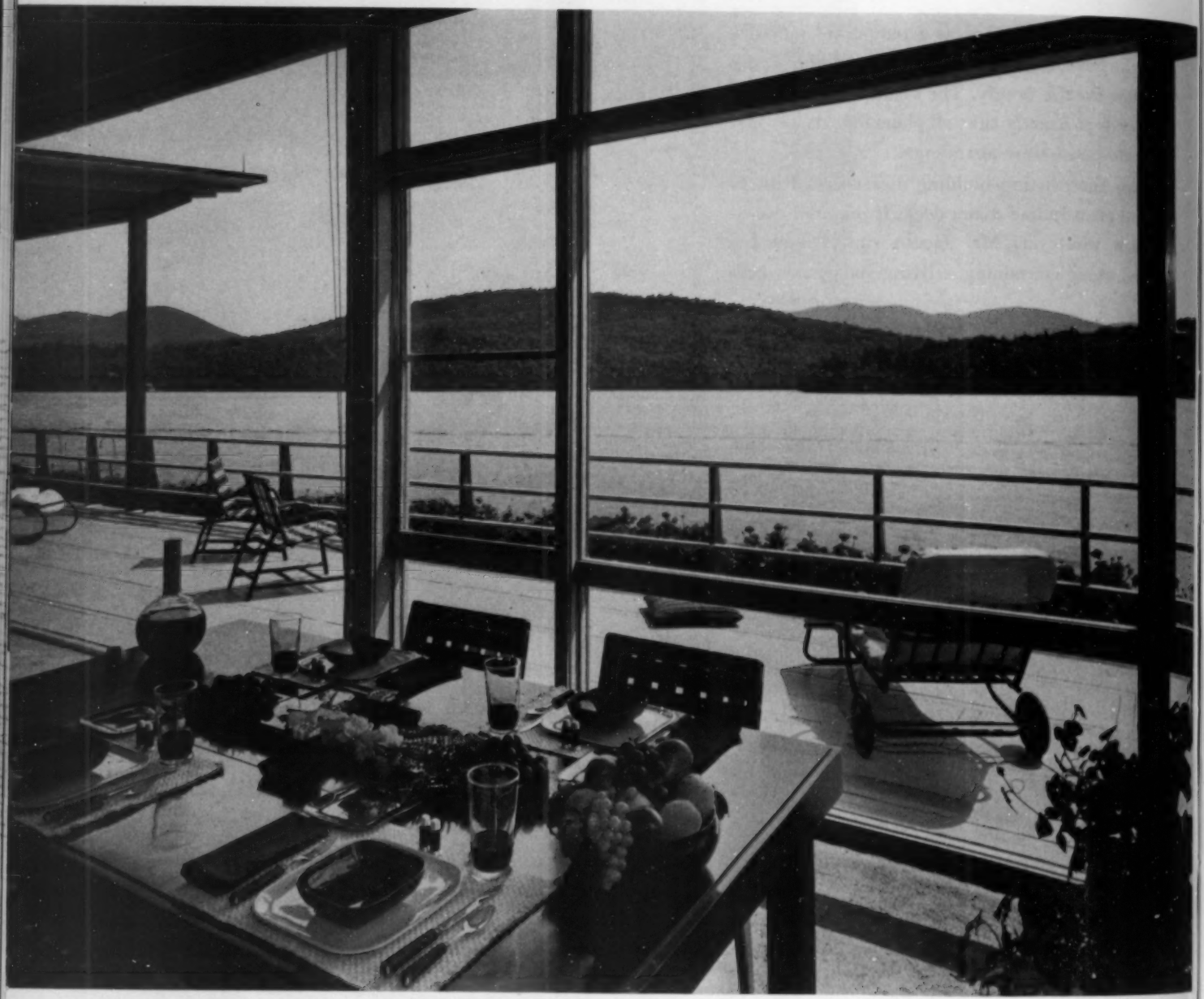
Damora



rooms, dressing room and kitchen, all but the last two facing the lake and opening directly to the broad deck and the morning sun. A study of the plan (page 99) reveals a number of handy details such as the special closet for bridge tables, the passage lined with storage space, the living room wood box which can be loaded from the hall. Boat slips are immediately below, readily accessible to the kitchen for the bringing in of supplies. Bathers have their own dressing rooms and shaded deck on the lower level at the south end of the house, right next to the beach. Servants' quarters are in a separate building a little way up the hill.

Artful placing of the dining area (see plan) makes it almost a separate room despite continuation of coral carpeting and knotty pine walls of living room. Built-in cabinets are walnut and coral, chair frames are coral. Storage space in the kitchen is much more generous than indicated at right, to permit once-a-week marketing. Servants have their own sifting room just off the kitchen

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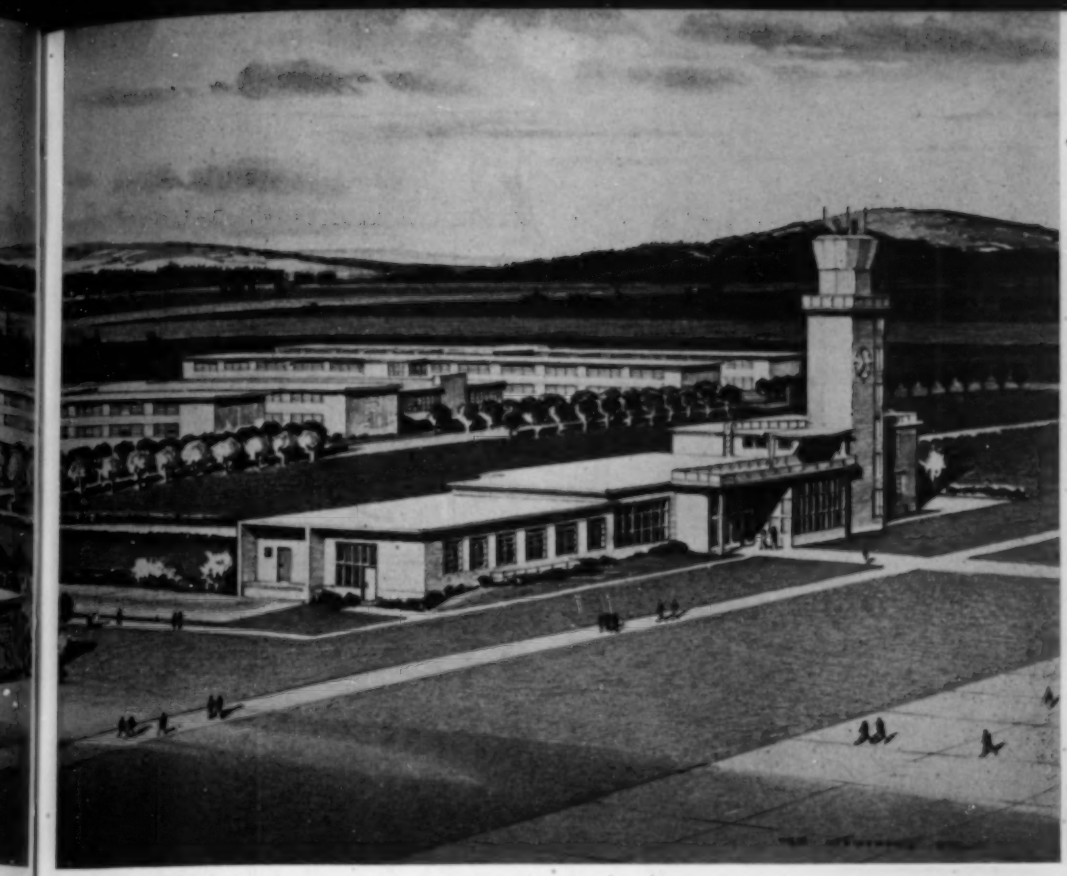
LIMESTONE AIR FORCE BASE;

THE group of buildings shown in the drawing above comprises that part of the new Limestone Base for the design of which the architect was responsible. They are: the Operations Building, in right foreground; the Power Plant, at left; the Barracks, at rear. Other structures — hangars, runways, etc. — were undertaken by the U. S. Army Engineers and were outside the scope of this work.

It is perhaps worth mentioning, at the outset, that Mr. Harriman had some early misgivings as to how a private architectural firm would fare as it became involved with the considerable number of responsible officials in the Army and the Air Force, and wondered if he would not find himself occupying an uncomfortable position between these two Services, possibly doing innumerable drawings in an effort to clear each point to the satisfaction of everyone concerned. However, the contrary was the case; Mr. Harriman reports that he had the fullest cooperation from the military authorities, and that the cordial relations which existed throughout exceeded anything he had felt justified in hoping for. Perhaps this will be a source of encourage-

Paul Wheeler, Del.



Ted Kautzky, Del.

Alonzo Harriman, Inc.

Architects and Engineers

LIMESTONE, MAINE

ment to other architects who may be invited to collaborate, in some similar manner, with these Services.

Site and climatic conditions were two of the important initial considerations in the design and construction of this group, which is now nearing completion. Borings indicated that a thin surface layer of weathered soil overlay a compact glacial till. In the case of the Operations Building and Control Tower, the basement floor elevation was approximately 5 ft. above the existing ground. It was determined that the most satisfactory and economical method of meeting this condition would be to place a sand and gravel mat over the area to be occupied by the building. Accordingly, an area extending to not less than 6 ft. beyond the limits of the building was stripped to a depth of 1½ ft. and backfilled with selected sand and gravel, spread in layers not exceeding 7 in. in thickness, and compacted by means of tractors or rubber-tired rollers to a density of 95 per cent and to the level of the underside of the basement floor slab. This material was then excavated to the elevations of the underside of the footings. Incidentally, this method of construction also expedited

Air Force Photo, HQ, USAF

Right: as seen from the air, the Operations Building divides itself into its main components. Left to right, on this front: Administration, Public Lobby, Pilots' Lobby and Weather (see plan on next page)

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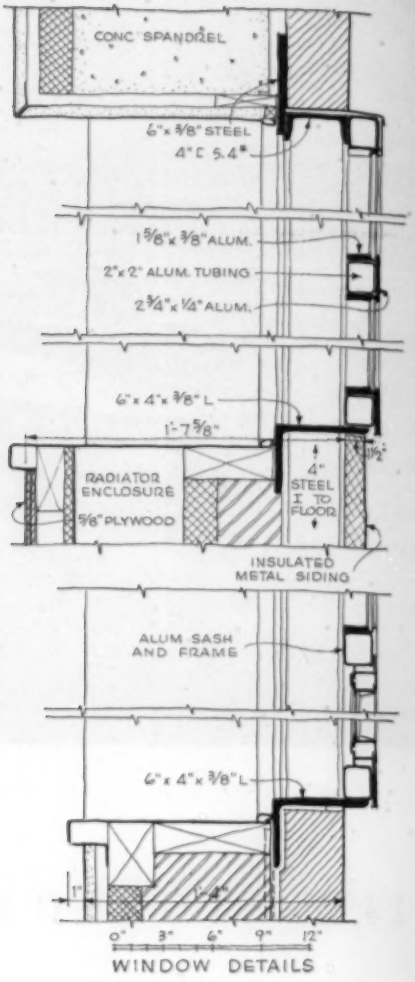
Floyd Yewell

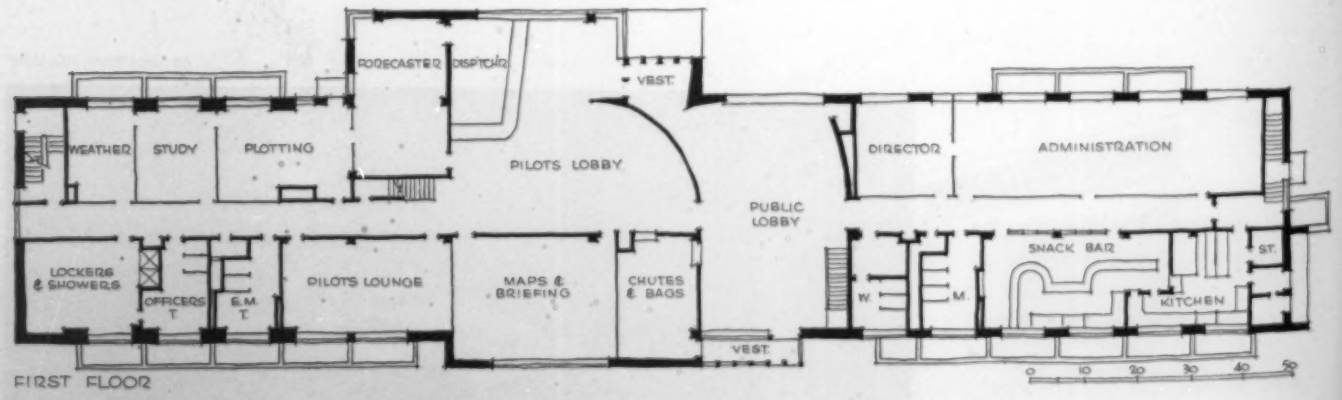


WINDOW DETAILS

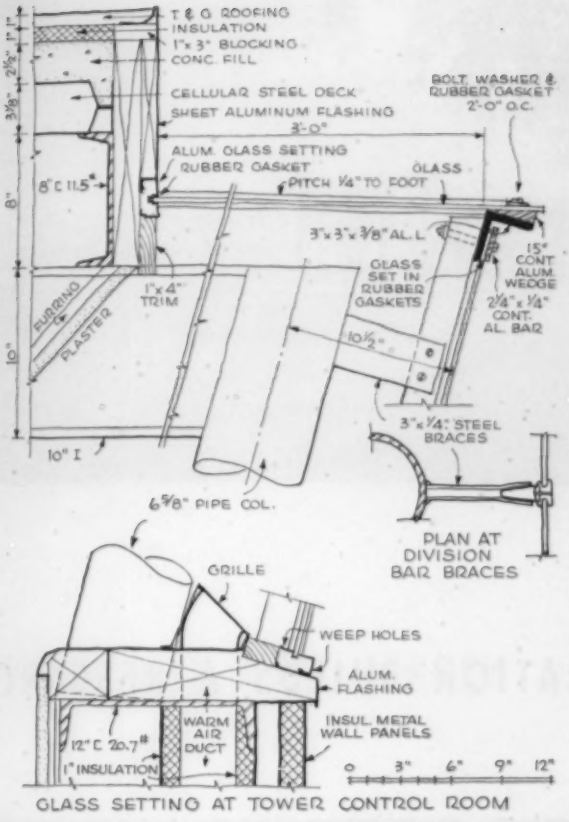
In designing the Operations Building, a modular basis was adopted for all the normal windows and the aluminum panels which separate them. These are removable and interchangeable so that any system of fenestration, from continuous windows to complete blackout can be obtained. All office space, as indicated in the plan below, is also designed to facilitate rearrangement as may be required. Because of the intricate system of wiring, a cellular steel decking is used for all of the second floor, part of the first, and all floors and roof of the Control Tower. The specially adapted wiring is led through its hollow cells

the progress of the work, since the existing soil became very slippery and sticky when wet.

As might be anticipated, the climate had an even more pronounced effect on the design. Since the winter climate of northern Maine can be severe, a design temperature of −30 was decided upon. In addition to exceptionally thorough insulation of all buildings, integral double glazing is used in every window. The steam heating systems of the buildings are so designed that adaption can readily be made when the central heating



FIRST FLOOR



GLASS SETTING AT TOWER CONTROL ROOM

plant and distribution systems, carrying high-temperature hot water under pressure, are constructed.

Although all current needs are met in this group of buildings, it was required that the designs be drawn to provide for possible future expansion. Thus, the Operations Building is so constructed that a whole additional floor can be superimposed upon it, and the present Power Plant represents only about one-third of its potential maximum development. The addition of more barracks units if needed, of course, presented no special problem.

Since Limestone is at a considerable distance from any large center, it was decided that locally available materials should be used to the greatest possible extent. All buildings are concrete frame (except the steel framed Power Plant), and water-struck Maine brick figures largely throughout. Except for some steel sash, practically all exterior metal — cornices, doors, panels, railings, etc., — are aluminum. The fact that it requires no painting weighed heavily in the selection of this material.

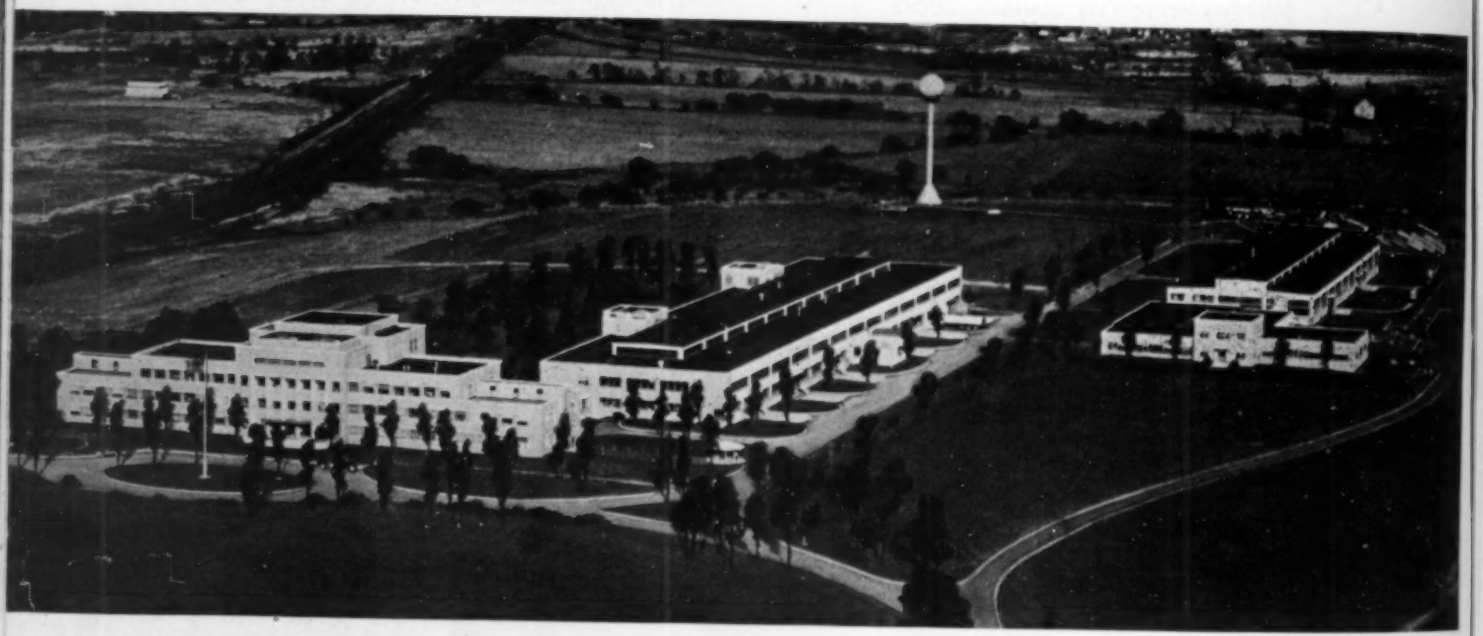
The Barracks (below) comprise typical squad room units flanking a central building which houses kitchens, mess hall, day room, etc., on the first floor, and boiler room, storage facilities, etc., in the basement.

Above: In addition to the tempered glass windows of the Control Tower, there is a section of glass roof extending 3 ft. in from the edge to increase visibility for the operators. In cold weather the entire glass area is "defrosted" by means of a forced warm air system exactly similar to that used for automobiles. The slant of the pipe columns is not for esthetics but is said to afford better visibility

Floyd Yewell

Gottscho-Schleisner Photo

LARGE CORPORATION BUILDS A RESEARCH



Weitner Aerophoto Service

Gottscho-Schleisner Photo

From the campus side, the Product Development Building, and . . .

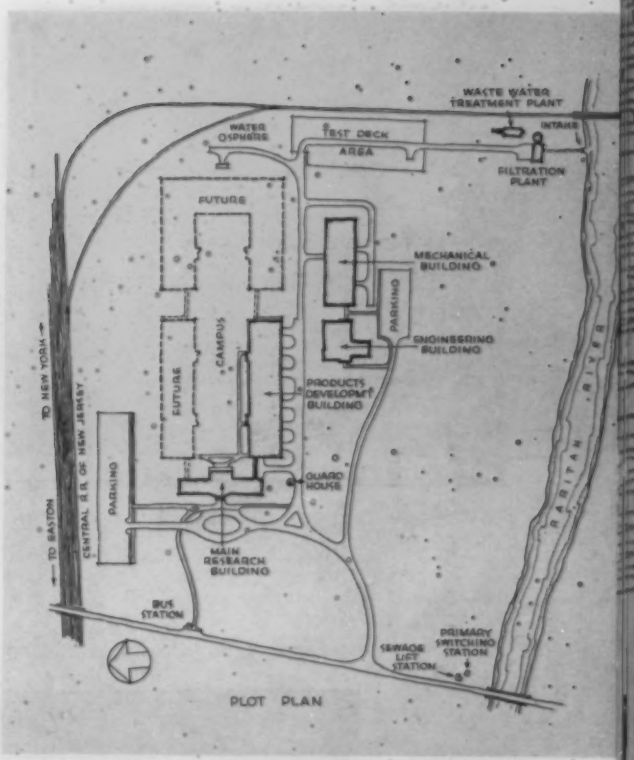
Shreve, Lamb & Harmon

Architects

This flexible expansible scheme also required the services of Purdy & Henderson Associates, Structural Engineers; Syska & Hennessy, Mechanical Engineers; Clarke, Rapuano & Holleran, Landscape Architects; under the supervision of Johns-Manville's Department of Engineering and with the active participation of C. F. Rassweiler, J-M's vice-president for Research and Development.

CAMPUS IN NEW JERSEY

JOHNS-MANVILLE RESEARCH CENTER, MANVILLE N. J.



The corporation's Research and Development organization is responsible for all experimental work affecting quality of a diversity of products — various construction materials, products for controlling sound, heat and motion, and filtration aids and fillers. The organization required an unusual scheme to accommodate, on the one hand, pure research and primary experimental work, and on the other, applied research closely related to actual pilot production, where products and processes are readied for full-scale manufacture by lab technicians who also run the pilot plants. The organization contains 21 Sections, each charged with what amounts to research and development responsibility for a separate industry. Close cooperation has to be maintained with the Mechanical Section (housed in its own building

Research and Administration Building

Gottscho-Schleisner Photo

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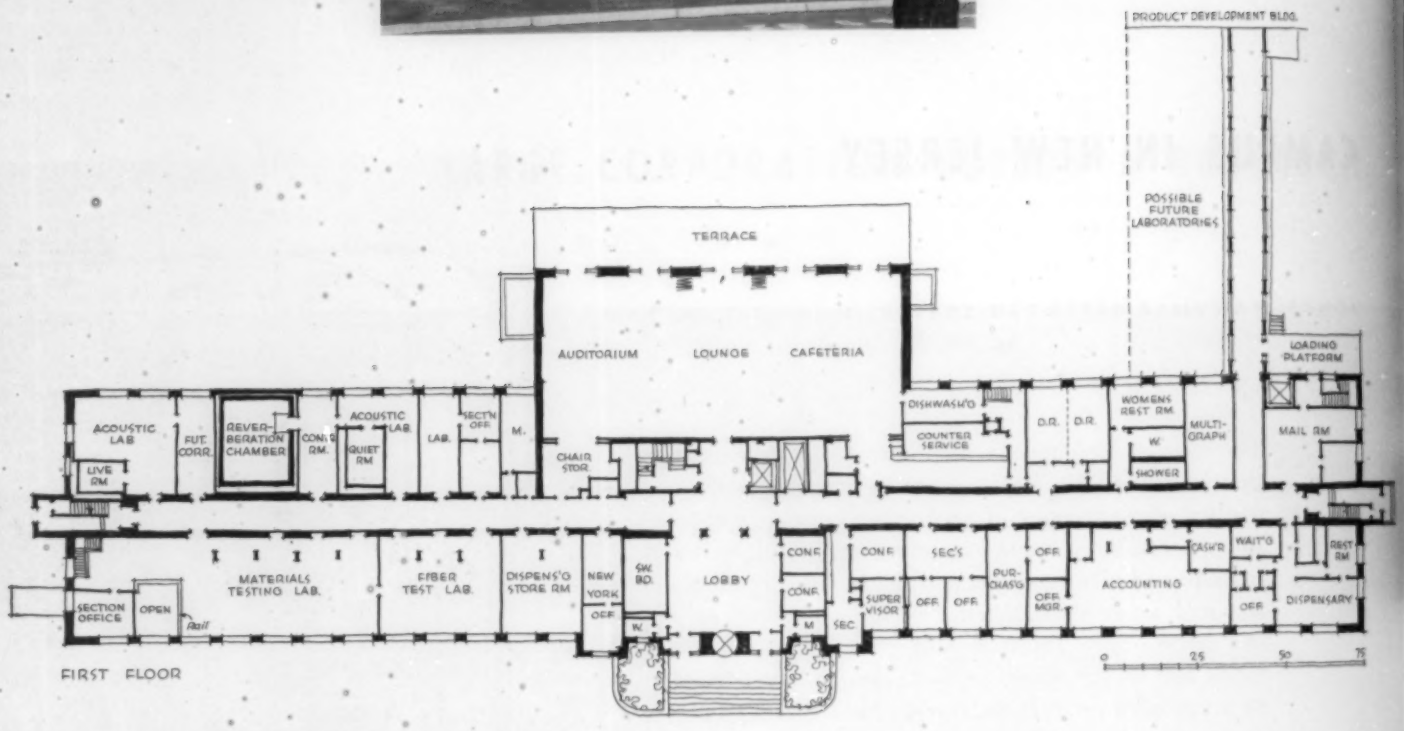
Research and Administration Building (left, main entrance; across page, private office and conference room) has three complete stories of which only the first floor plan is here shown, and a four-story center section. Built with reinforced concrete basement, steel-framed superstructure, concrete floor slabs, brick curtain walls, and limestone and stainless steel accenting



Entrance leads to cafeteria-lounge-auditorium, whose partitions fold back to form one large room

the principal entrance, the building contains the Center's pure research laboratories (materials testing, acoustic, optics, insulation testing, physics, electrical testing, heat flow, photography, spectrophotometry, spectroscopy, chemistry, air filtration, organic, etc.) as well as offices, auditorium, library, dispensary, cafeteria, dining rooms, and kitchen. Entire building is air conditioned

Above and below: Gottscho-Schleisner Photos

Johns-Manville Photo

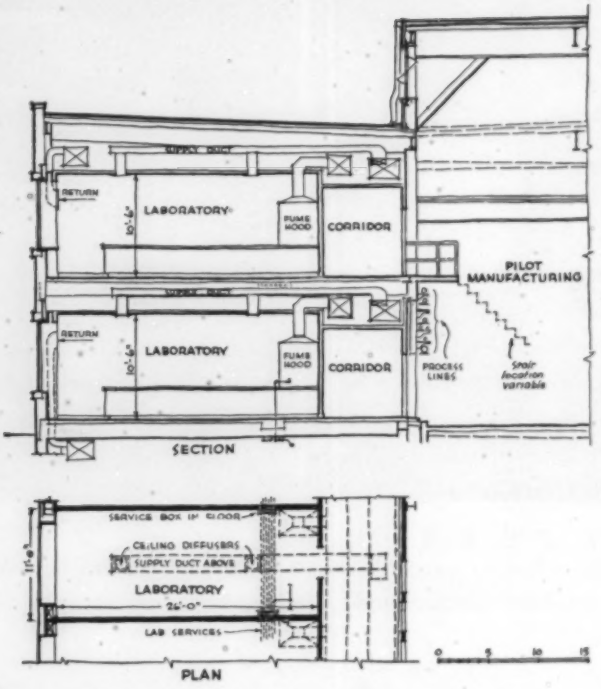
South end, Research and Administration, showing present connection (which can ultimately be enlarged to provide more laboratories) to first-floor corridor, Product Development Building (right photo)

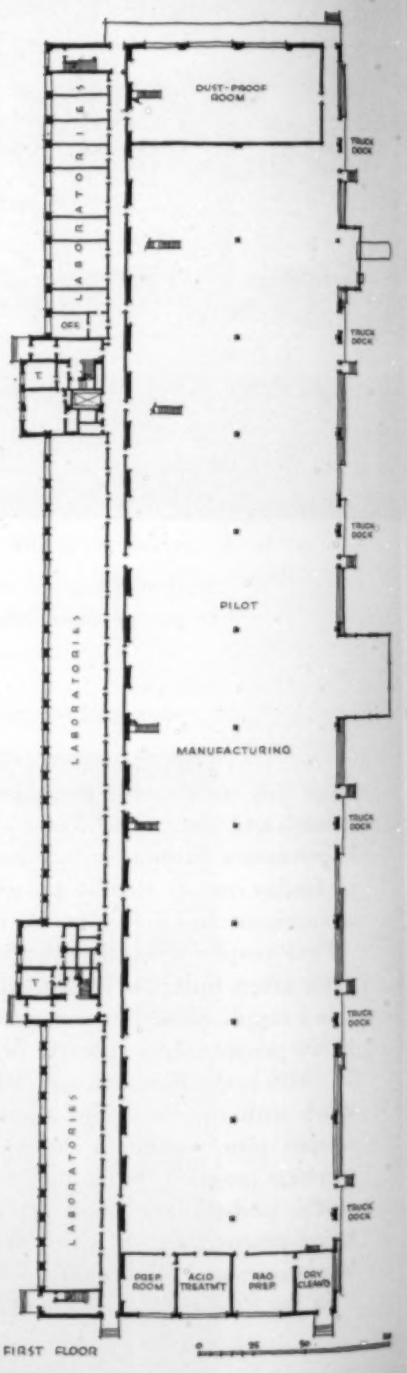
where are constructed equipment and machines for research and plant operation) and with the Engineering Departments in another building. These requirements are further complicated by a need for flexibility of space arrangement and for expansion over a period of years.

First completed was the filtration plant, where process water taken from the Raritan River is treated to provide a supply equal to the normal demand of a town of 10,000 people. Most recently finished (dedicated May 24, 1949) is the Research and Administration Building, which with the structures shown in solid line on the campus plan, completes the present part of the construction program. While the last building is the nerve center, probably the most interesting is the Product Development unit, in which are the applied research laboratories and pilot plants.

In the Product Development Building a 38-ft. wide, two-story laboratory structure runs full length of a one-story manufacturing space which contains 10 pilot plants under one roof. The two-story section contains many laboratory units (each expansible on a module 11 ft. wide), and offices, conference rooms, etc. Between the two areas are 8-ft. corridors, one on each floor, across which technicians may step to observe plant operations through wire-glass windows. Doors open directly from corridor into plant space; at the second laboratory floor they open on small balconies to which may be attached stairs leading down to the manufacturing floor. Arrangement of laboratory service and plant process piping is extremely flexible and convenient.

Under the laboratory section is a continuous concrete basement for storage and building equipment, and as a service tunnel through which pass steam, water and other mains. The campus facade and end walls are of





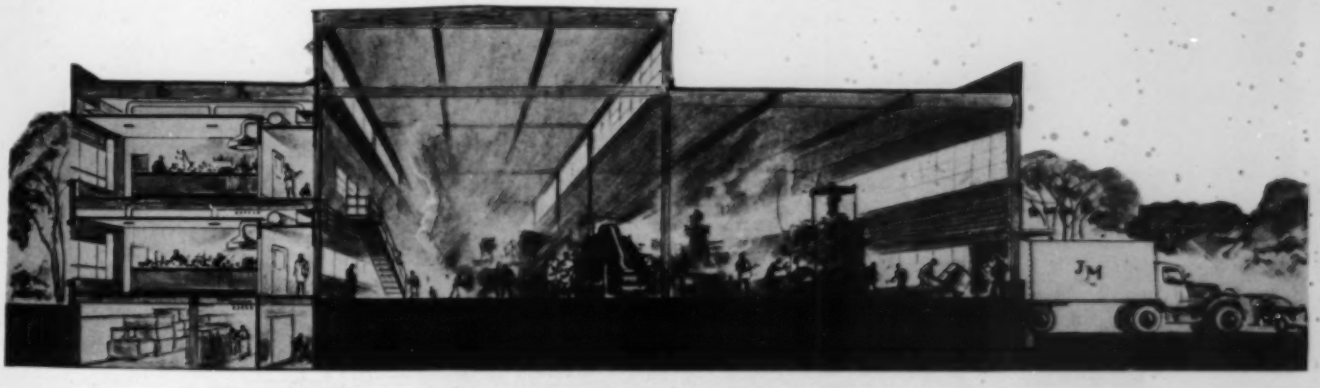
Photo, section and plan above show typical laboratory, designed on an 11-by-26 ft. module which determined column spacing for both the two-story laboratory portion (22 ft.) and manufacturing space (44 ft.) of Product Development Building. Note immediate access across corridor to pilot plants

face brick and 8-in. concrete back-up block. Roof construction is interesting: to light purlins 3 ft. o.c., corrugated asbestos-cement sheets were fastened with welded studs; over this, insulating board and roof surfacing were applied. The stud-welding method, in which all work is done from the top, resulted in substantial economies over such methods as drilling the asbestos-cement and fastening it with bolts, which necessitates working from beneath.

Laboratory partitions and furring at exterior walls consist of integrally colored asbestos-cement panels which, while they are wholly demountable, salvageable

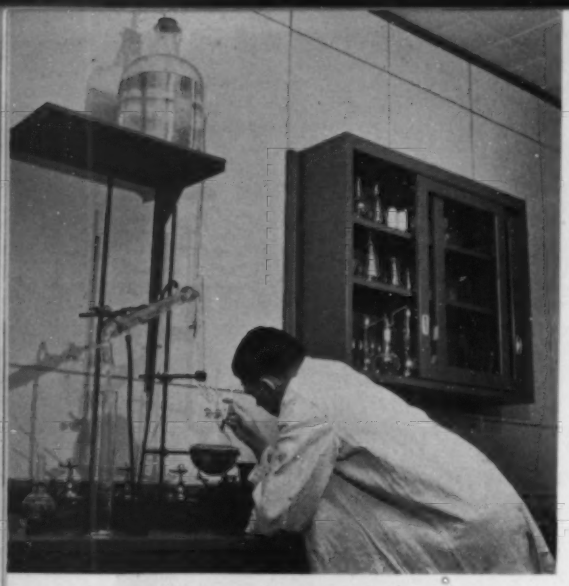
Above: Gottscho-Schleisner Photo

Above: pilot manufacturing space accessible to both laboratory levels. Process piping encircles area at about mid-height. Right: portion of wall removed and manufacturing bay extended to accommodate extra-long process. Below: section; basement under labs for storage and equipment; construction of plant's exterior wall facilitates truck shipping and receiving



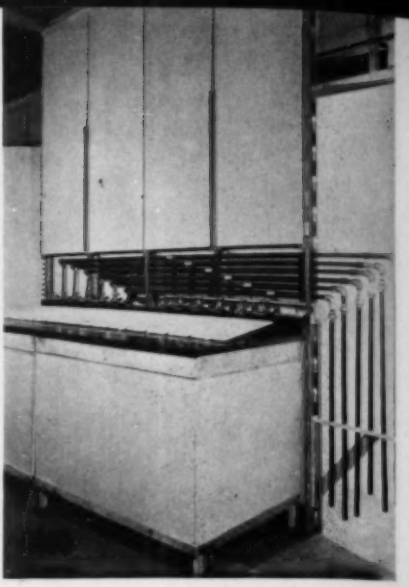
and revisable, have a surface coating, pre-finished, which is designed for permanence and ease of maintenance. The panels are mounted on light-weight steel studs (see following page for details) which also carry laboratory piping, electrical, and waste lines; and provision is made for attaching shelving and equipment to studs at panel joints. Floors are asphalt tile, ceilings acoustic tile. The entire laboratory section is air conditioned, with a separate exhaust for the fume hoods. Location of the air distribution, ducts and laboratory service piping is visible in the sections above.

The 100-ft. wide experimental manufacturing area has one continuous high-bay monitor. Its south wall is an 8-in. brick curtain up to sill height, with glass and corrugated asbestos-cement above; the wall is easily removable to accommodate processes longer than the normally enclosed space, and to "button on" trucks for loading and unloading. Glazing of south, east and west walls is of glare-reducing glass above eye level. The floor is a 6-in. slab with heavy-duty finish; in it are trenches, 22 ft. on centers, covered with gratings and running transversely to a collection trench along the outside wall. This was necessary because most of the pilot manufacturing deals with wet processes.

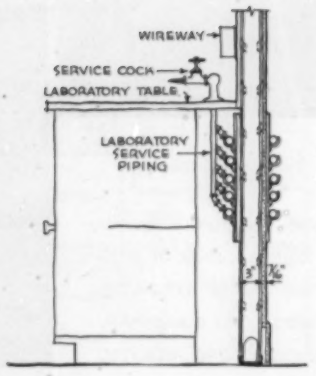


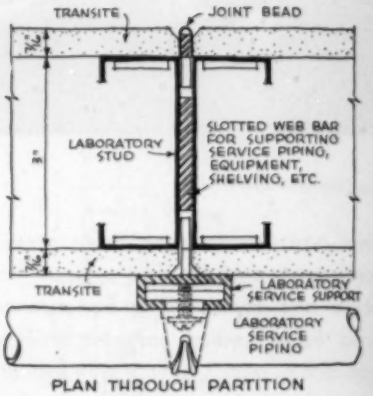
Sheldon Merritt Machlin Photo

Laboratory module was developed to its final dimensions, 11 by 26 ft., only after extensive work and deliberation. Width was determined by building a series of mock-ups (photo at right) and determining clearances essential for the type of equipment which might be required in aisles and on counters. Length is appropriate both for economical steel spans and to subdivision into anteroom plus private office for lab directors, etc.

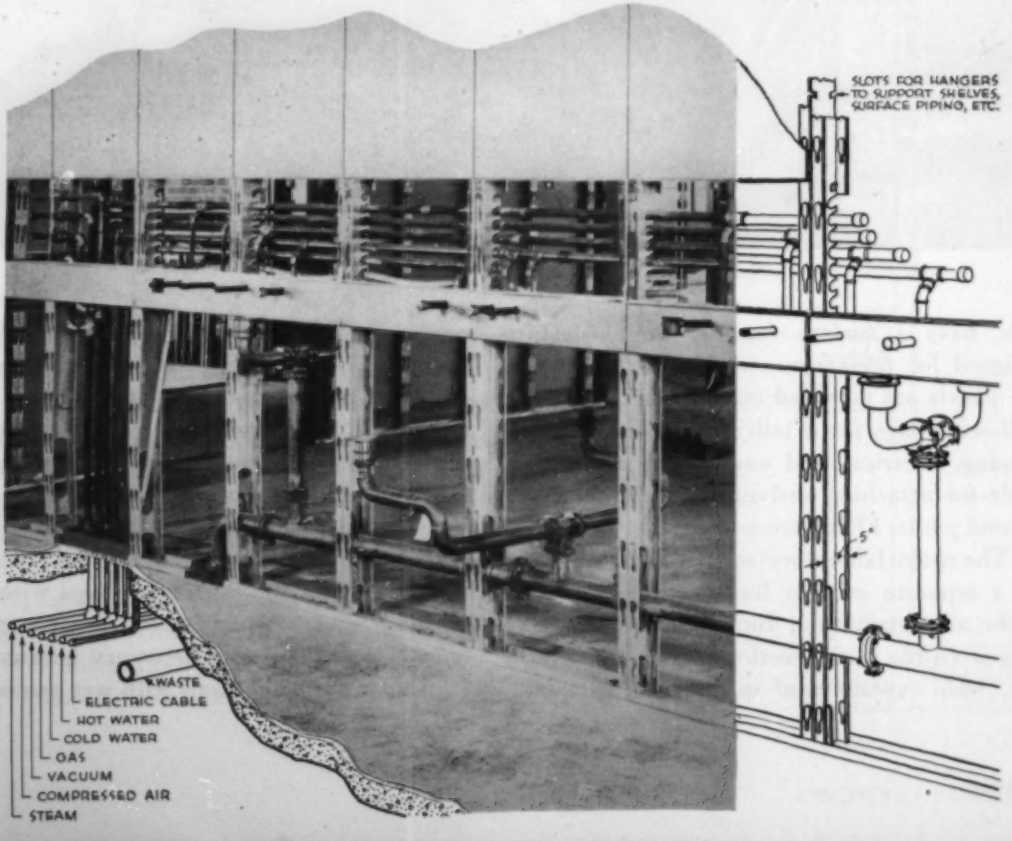


Extremely important in laboratory design was development of a wall which, in addition to subdividing space, can carry services efficiently to the point of actual use; and which also can support shelving and equipment without destroying the surface. Services may be carried either within (as in these laboratories) or on surface of wall. Integrally colored asbestos cement panels are secured by means of buttons which slide into slots in studs. Easily relocated or changed, 100 per cent salvageable when demounted, this patented construction system is now available commercially





PLAN THROUGH PARTITION



Shaw, Metz and Dolio, Architects

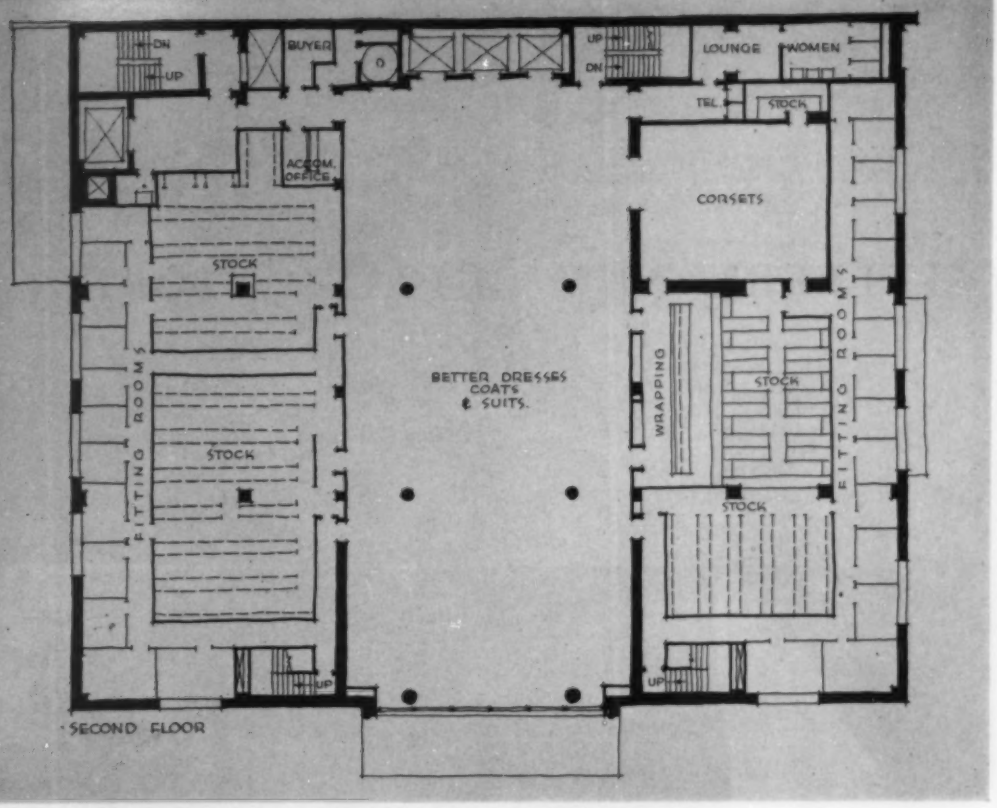
BONWIT TELLER'S NEW CHICAGO STORE

William Pahlmann Associates, Interiors

Hedrich-Blessing Photos

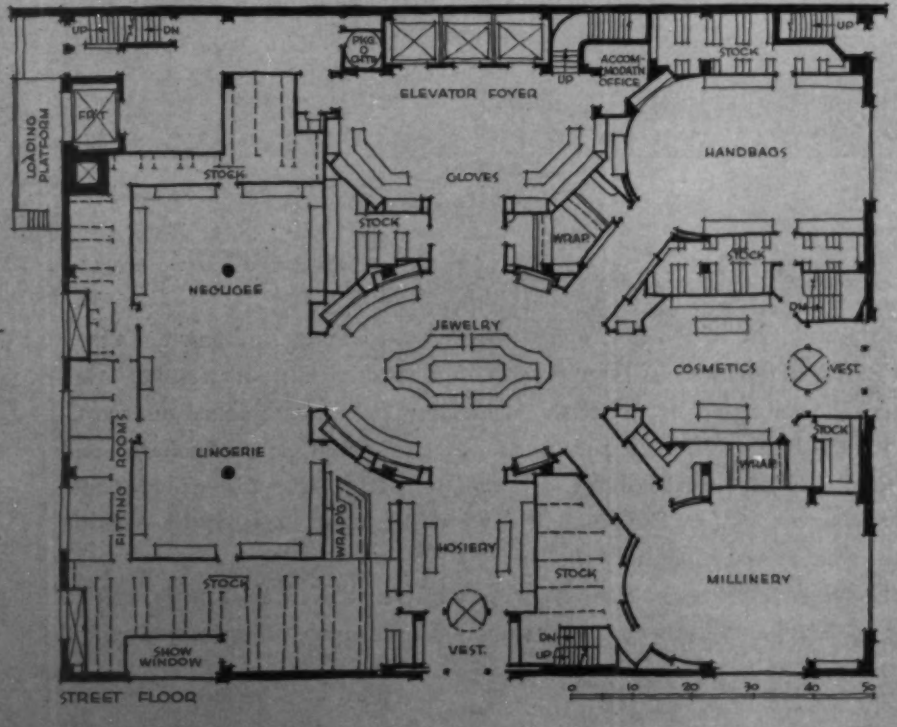
FROM the moment of the first announcement concerning it, Bonwit Teller's new Chicago store held the interest both of prospective customers and of store architects the country over. What would this new building, designed in accordance with the firm's own selling technique, be like? Would it be "modern" and full of new ideas? Would it follow the "free-flow" pattern of counter placement? Bonwit Teller could afford and undoubtedly would demand the best; the question was, just what would it consider the best?

Until a couple of years ago Bonwit's was exclusively a New York store, a Fifth Avenue specialty shop drawing its customers from the most discriminating and



All through the store fitting rooms and stock rooms are arranged around central sales salons giving daylight to the fitting rooms and permitting strict control of lighting in the sales areas. Delivery and shipping facilities are banked in one corner (upper left). Second floor plan is typical of the three upper floors

the most fashionable of feminine circles. In 1947, however, it expanded its activities to include Boston's elite, choosing — presumably because of the still lingering shortage of building materials — the old Museum of Natural History as the showrooms for the very much *au courant* merchandise it features. William Pahlmann, called in to give the sedate Victorian museum the required Bonwit atmosphere, flooded the high-ceilinged, out-dated building with color and imaginative detail to the complete delight of fashionable Bostonians.



Main floor handbag salon (right) has yellow-green walls, satin-stripe yellow-green and beige curtains, a 14-ft., 19th century Sheraton bookcase. The "Oval Room" at center of main floor (below) displays accessories in the only real showcases in the store; walls here are gray, accented by pink leather banquettes

Hedrich-Blessing Photos

Hedrich-Blessing Photos

Main dress salon on second floor (above and opposite page) is 100 ft. long, 50 ft. wide, and 18 ft. high, dominated by huge bay window framed in ruby velvet. Walls are mauve-gray, carpeting is in two shades of gray, upholstery is red, purple, cerulean blue. Debutante salon on third floor (left) is in canary yellow and sage green, with pink-red accents; merchandise is accessible to impatient young customers

Late last August the new $2,000,000 Chicago store opened its doors. Not unexpectedly, perhaps, it proved to be conservative, aristocratic, and oblivious to customary showmanship, combining the dignity of the Fifth Avenue quarters with the whimsy and flair of the converted Boston museum. As Bonwit's own staff puts it, the building is based on "drawing-room" selling in which the background is intended to approximate the surroundings in which the merchandise on sale will be worn. The straightforward interior provided by the architects was prettied up, therefore — by Pahlmann, of course — with crystal chandeliers, wholly uncommercial color schemes, imported antiques, fine woods and handsome fabrics to create the informal living rooms, libraries and drawing rooms desired as a selling background. Bonwit Teller's new store, in other words, has been custom designed to fit the firm's reputation for catering to the elite; it depends upon the magic of a name (displayed prominently) rather than upon show windows (of which it has only one) and the intricately arranged display counters intended to lure the customer into impulse buying.

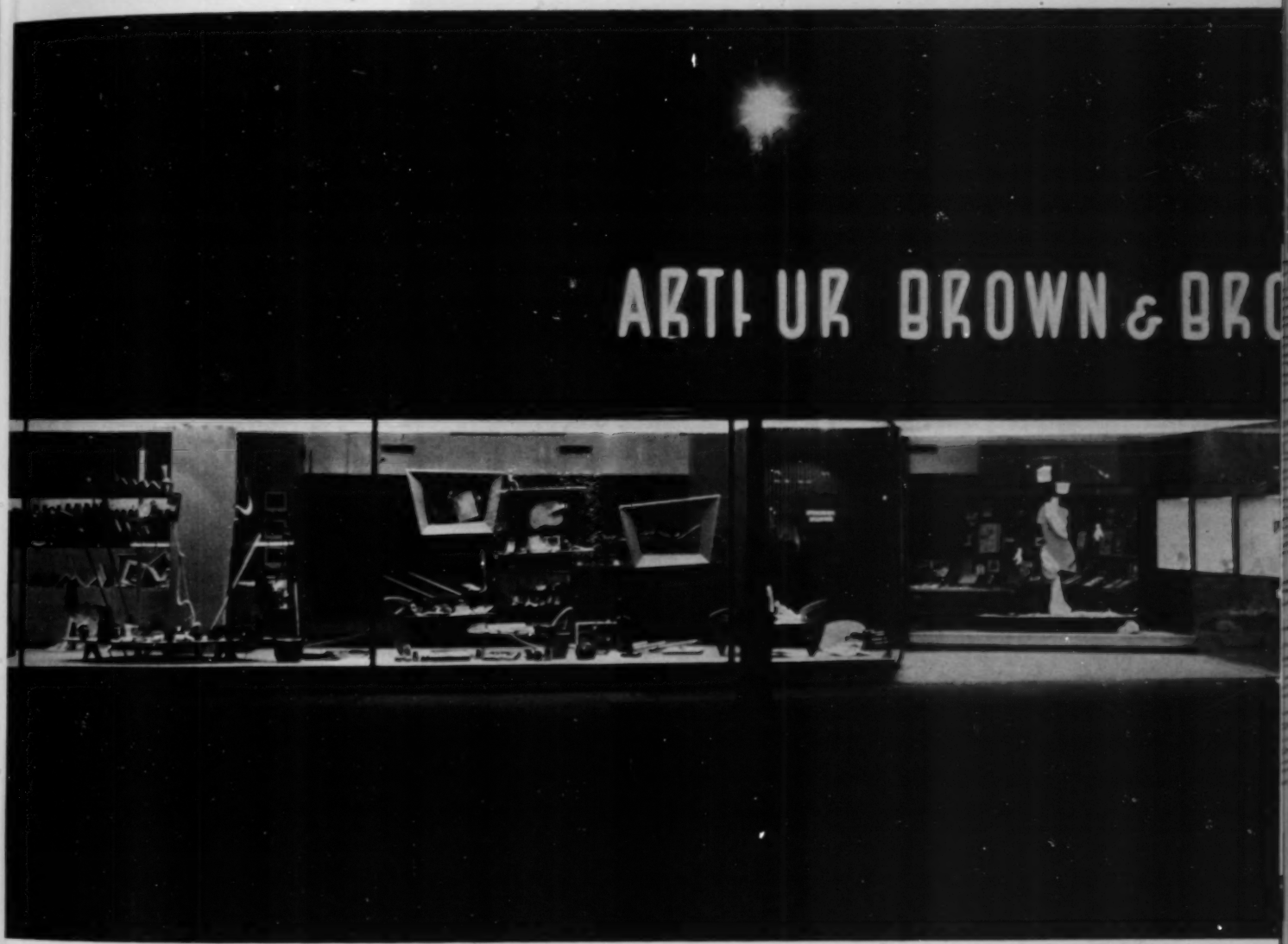
Hedrich-Blessing Photos

Above: the bridal salon, in a secluded corner on the third floor, has patterned wallpaper in mustard green on canary yellow, yellow-green carpeting, rose-pink accents. Left: above, the children's shop on the third floor boasts a gay brown bear and a magenta wall motif of children's tops; below, the fourth-floor sports section is informal with oak wall cases, rough-textured fabrics, brilliant colors

SHOPS AND SMALL STORES

ARCHITECTURAL RECORD'S BUILDING TYPES STUDY NUMBER 154

Kassel S. Slobodien Photos



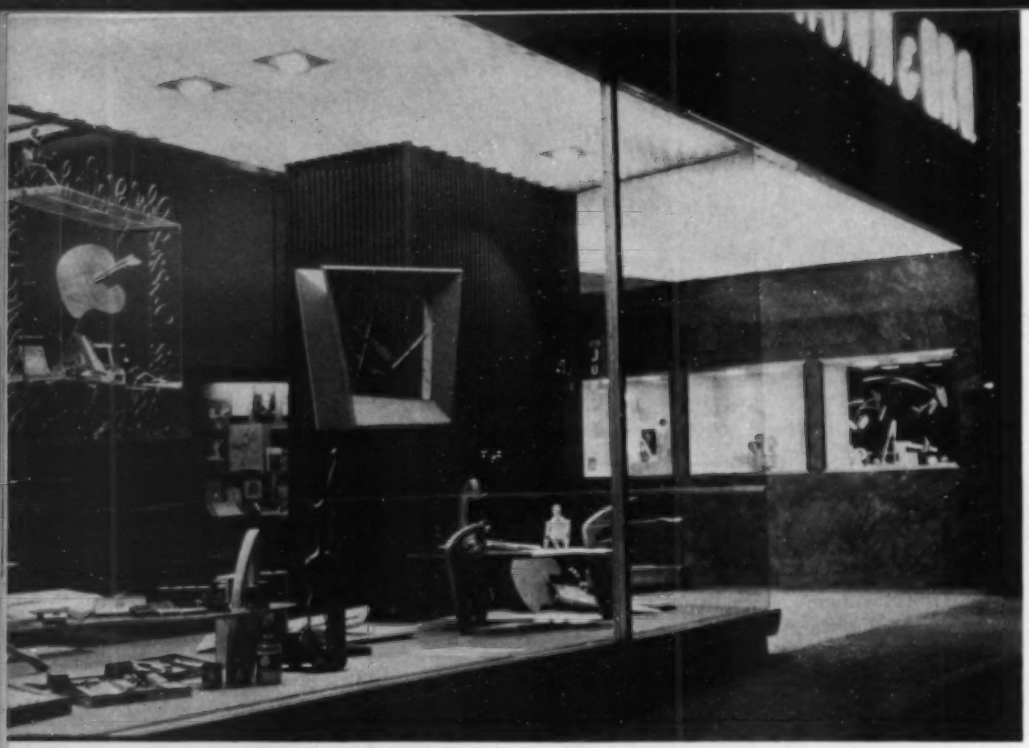
AN ART STORE DESIGNED FOR MODERN MERCHANDISING

Arthur Brown & Bro., Inc., New York City

Thomas Sapolsky, A.I.A., and

Kassel S. Slobodien, Architects

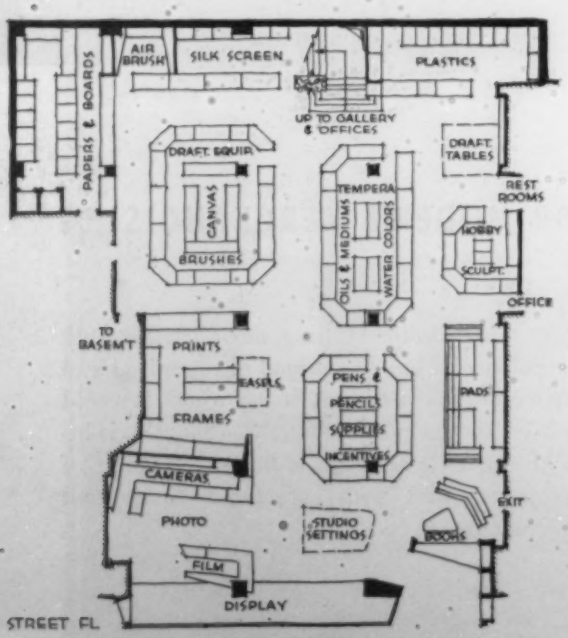
In these days of streamlined selling, most artist supply stores paradoxically have remained disorganized and cluttered-up merchandising areas. Store owners, it would seem, have been convinced that purchase impulse is induced into the artistic soul by a happy abandon of disarranged paints and pads, scattered easels and drawing instruments.



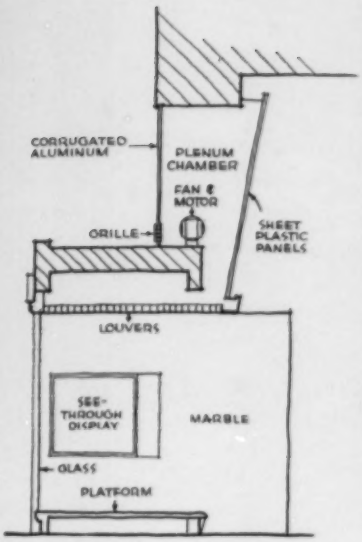
Note that display window spotlights form an integral part of egg-crate louvered ceiling. Right: section through show window indicates plenum chamber. Fan runs continuously in summer to relieve air-conditioning system, periodically in winter to eliminate condensation

Moldings with lugs to fit perforated backing give adjustable book support

Architects Sapolsky and Slobodien have broken this tradition dramatically and conclusively in the design of the Arthur Brown & Bro. store. An "open front" design of unusual visual impact has been developed by the use of a continuous display window which, in combination with an entrance vestibule which has wide entrance doors of tempered plate glass, stretches from one end of the 65-ft. front to the other. The planning of this display-entrance element is given added unity of design and purpose by the egg-crate louvered ceiling, used for illumination, which extends continuously over the whole area. The show window is exposed to a minimum



The wide show window and entrance is framed on the facade by cedar colored marble. Projecting marble wings at both ends of the display front are pierced by see-through show cases which can be viewed from either side. The photography department and book center, both facing the open window, were designed both as display backgrounds and as partial screens for departments behind. The book center uses a perforated asbestos display board. The photography screen is a patterned plywood painted bright coral. Columns flanking the entrance doors are covered with fluted fireproof oak panels, painted deep blue. Interior wall and ceiling colors are warm gray and yellow with accents of blue and coral. Fixtures are of light oak



SECTION THROUGH SHOW WINDOW

PHOTOGRAPHY DEPARTMENT

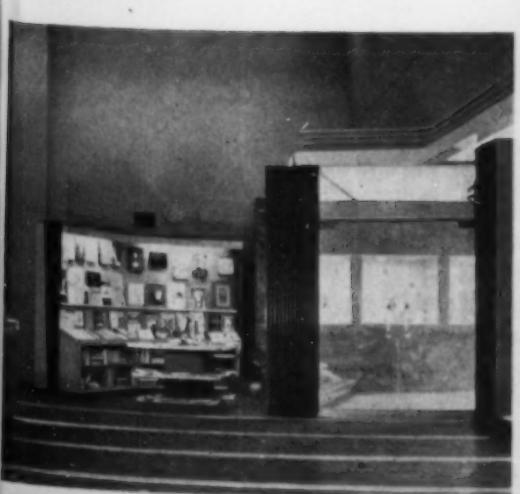
amount of veiling glare as the facade faces north and is surrounded by tall buildings.

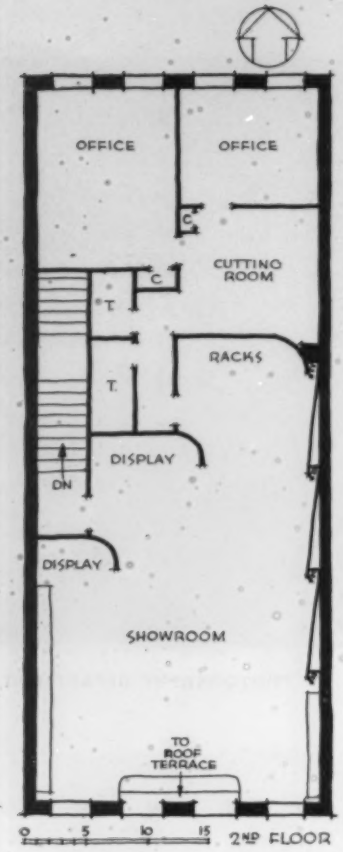
The many items which the store offers have been departmentalized into retail sales sections in accordance with accepted modern merchandising practices. A modular fixture system consisting of two types of counter units for display and storage and one type of back fixture with adjustable shelves allows complete flexibility for the rearrangement of departments.

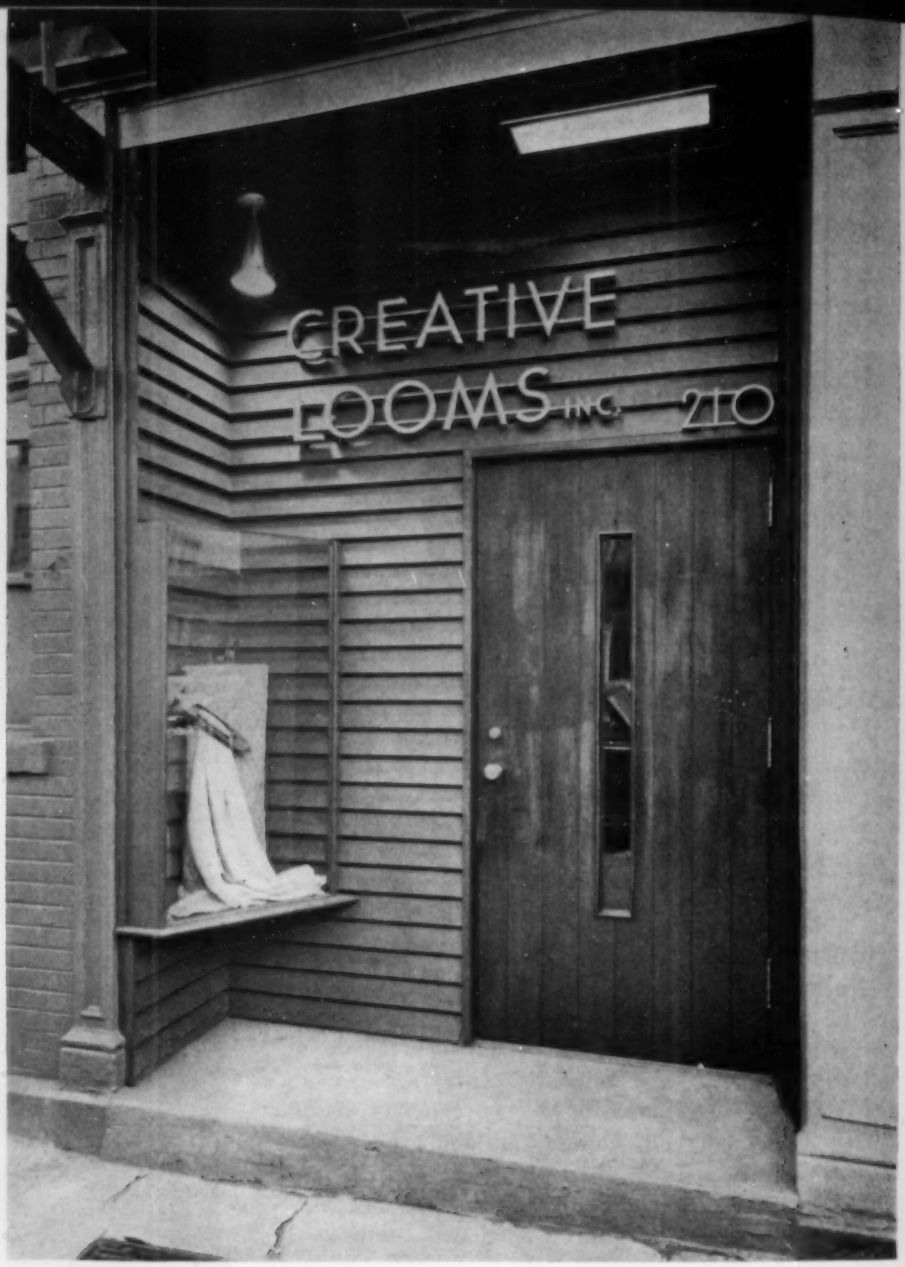
The store is completely air conditioned. Stairs at the rear lead to reception areas, offices and an exhibition gallery on the mezzanine. Basement is used for stock.

FILM COUNTER

BOOKS







Building facade was defaced with fire escape which could not be removed. New redwood entrance, however, provides vestibule and brightly illuminated show case to identify occupancy

SHOWROOM AND BUILDING FOR CREATIVE LOOMS, INC.

New York City; Marie Frommer, Architect

THIS display room for an exclusive handweaving firm has been planned to provide suitable environment for the display of colorful merchandise. Architect Marie Frommer, achieves the proper atmosphere by means of a soft totally indirect lighting system accented only by recessed spotlights above display areas. In addition great restraint has been used in interior decorative treatment. Walls, ceilings, and floors are not only simple in form and texture, but are sedately toned in varying shades of warm gray.

The complete architectural task was to convert an existing two-story and basement loft building into offices, showroom, and manufacturing area. Principal remodeling was done on the second floor where the showroom was planned to the south and rear, the cutting room placed in the center, and offices moved to the

Bottom of page: Lighting scheme of rhythmically arranged fluorescent strips used in street floor working area is novel for cloth weaving which generally has lights concentrated over each individual loom

Ben Schnall Photos

north facade. The showroom thus has a pleasant view to the south and convenient access by means of four French doors to a landscaped rear terrace used for outdoor exhibits. A new and comfortable stair provides customers with direct and easy access from the street to showroom.

The street floor is manufacturing area and includes space for all the various procedures involved in the production of handwoven fabrics. Storage is in basement.

A STORE FRONT DESIGNED TO REDUCE VEILING GLARE

Siegel's, Grand Rapids, Mich.

Wilfred P. McLaughlin, Architect; Kenneth C. Welch, A.I.A., Associate Architect

SUCCESSFUL present-day store window design must normally eliminate, or reduce as far as possible, distracting glare caused by the reflection of surrounding outdoor objects. Siegel's, a luxury-apparel-gift store, makes an honest and straightforward effort to do just that. The accompanying sketches and photographs show the architects' studies and their final solution — a geometrical arrangement of glass in reference to normal and important viewpoints so that only surfaces of lower brightness are reflected.

There are many ways that the successful elimination of veiling glare can be accomplished. Mr. Welch presents various solutions to these problems in his article "Reflection Factors in Store Windows," in ARCHITECTURAL RECORD, July 1946.

Briefly, it has been established that the point of "apparent veiling glare" is reached when the ratio of brightness * of the principal surfaces being reflected to that of the surfaces being viewed through the glass is unity (one to one). In this case the veiling glare is just barely apparent and may be called a quite satisfactory condition. Increases, however, in this ratio naturally result in

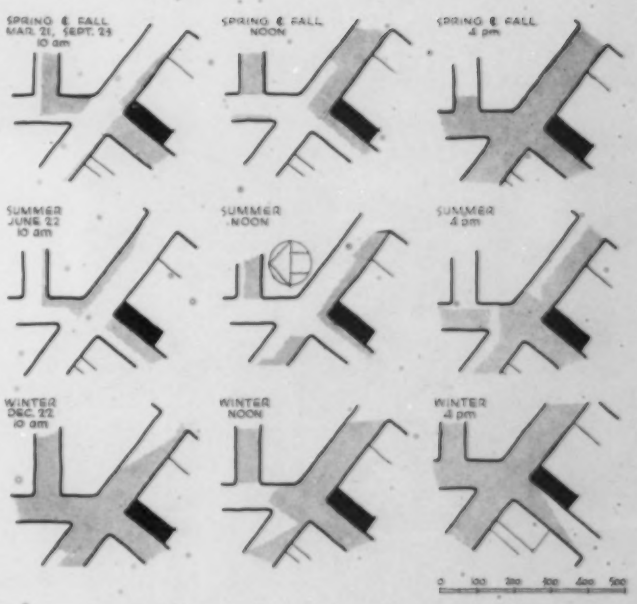
* *Brightness, measured in foot-lamberts, equals the amount of light, measured in foot candles multiplied by the reflection factor, which is the percentage of total light reflected.*

Photograph at left, taken about noon in late summer, illustrates effectiveness of slanting display window drawn in section at right. Note how 90° vertical glass in end of shallow display and in door reflect sunlighted objects and buildings, completely obliterating display. Objectionable veiling glare in slanting window (moving bus, white line in street) is above normal display height. Section at right indicates reflection angles and brightness of both show window display and environmental objects. Architects made every effort to highly illuminate background to attract attention and emphasize form by silhouetting merchandise

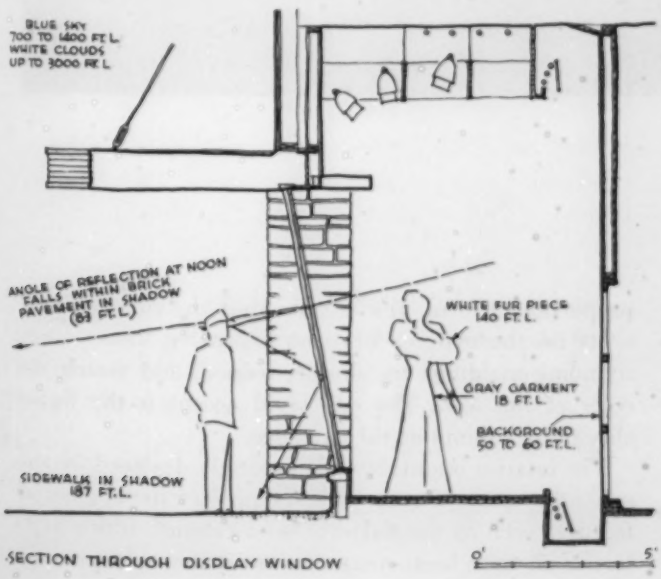
an increasingly unsatisfactory condition. When the ratio of reflected to viewed brightness reaches two, a condition results which can be called the threshold of destructive veiling glare. When a ratio of five is reached, an unfortunate glare condition arises which completely destroys the primary function of the display. This condition may easily result when a clear sky, or some light sidewalk, street or building surface, with medium reflection factors, is reflected in a store window.

Obviously, as has been done with Siegel's, a necessary preliminary to store window design is a thorough analysis of the given site with relation to its solar orientation and the brightness of surrounding elements such as sidewalks, streets and buildings which, if reflected, can destroy display values. The type of store, its time of daily and seasonal peak load and the class of customers to which it appeals must also be considered. Pertinent to the final solution for Siegel's, which does its luxury business from 11 o'clock in the morning on and does less business in summer than in Spring and Fall with peak load in December, was that shadows cast on streets were greatest during peak sales periods.

Kenneth C. Welch Photos



Right: Architects made plan drawings of site and surrounding structures with shadows cast for spring and fall, winter and summer as part of thorough evaluation of brightness environment. Photograph bottom right, made during August about noon, confirms environmental studies, illustrates how angle of reflection (shown on section below) falls within street shadow. Canopy protects display window glass and sidewalk from sky and cloud glare, window shoppers from rain, snow and morning sunshine



SECTION THROUGH DISPLAY WINDOW

John Eken Dinwiddie A.I.A., Architect, and Richard Maxwell

LUXURY SHOP PRODUCED

LOCATED in an expensive shopping area and offering luxury items of imported silver, porcelain and bronze, this store has had to achieve its quiet elegance and good taste at a minimum of expense. The owners had plenty of resources in Copenhagen but few American dollars. Money for construction was necessarily rigidly restricted.

The architects thus solved this typical jewelry store problem on a basis of effective color and simple well-proportioned form. It's of note that the small display units on the exterior have no expensive frames. Surrounding moldings are simple, refined, and match the color of the wall. The one vivid accent is the fluted chromium column at the entrance.

The interior is suitably but modestly designed for the general display of many small expensive items. Special features such as the flatware sales cabinet, which is illustrated, have been created to assist the customer in a

WITH A MINIMUM BUDGET

Roger Sturtevant Photos

S. Christian of Copenhagen, Inc.

San Francisco, Calif.

comfortable and orderly examination of merchandise. Dark mahogany was chosen for cabinet work as the best background for the gleaming silver and porcelain on display. The ceiling is a royal blue and other colors are in harmony to produce the desired luxury atmosphere. General lighting is provided by simple spots through diffusing lenses. The use of planting on both the exterior and interior adds life and color.

New Warsaw Bakery

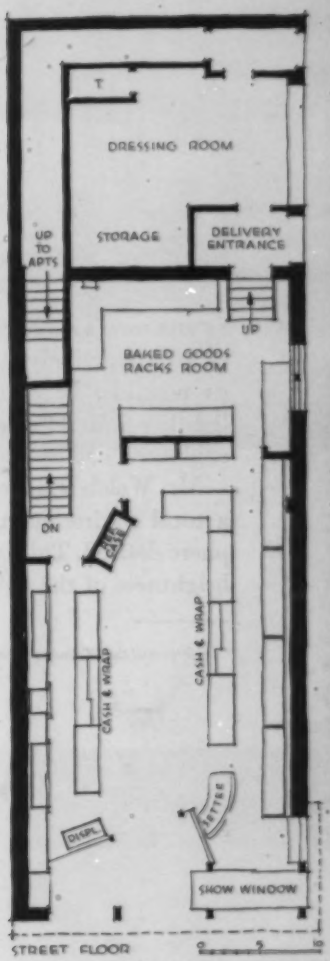
Brooklyn, N. Y.

A MODERN OPEN FRONT BAKE SHOP

SINCE grandmother's day bakeries have been attracting passers-by with the pleasurable aromas of oven-fresh delicacies. Present day moppets (and grownups) are now not only subjected to this same sweet persuasion through the olfactory nerves but more and more frequently are faced with a formidable visual appeal as well. The combination is well-nigh irresistible, and perhaps in no other use is the "open front" so successful as in modern bakery design.

Architects Kaplan and Neivert have planned their shop with as open a front as possible. The three existing cast iron columns have been covered with aluminum; two of these columns, converted into pylons, support a low all-glass air conditioned showcase at the sidewalk line. The whole front is framed with red marble at top, sides, below the showcase and at the return of the entrance vestibule. The plate glass front is well recessed and thus less vulnerable to veiling glare.

The shop is neatly organized on the interior, merchandise is attractively displayed, and lighting is of high intensity from inconspicuous sources. The plan is divided into two selling areas, one area to the left of the entrance is for special orders; the other, for general bake goods, forms a long L to the right. Both sections have generous well protected display areas and both have wrap-up counter and cash register facing customers. A refrigerated counter for ice cream cakes and candies is set diagonally at the rear.



Alexandre Georges Photos

Robert Kaplan, A.I.A., and Marvin J. Neivert, Architects

The general lighting scheme is indirect augmented by direct recessed lensed units set into ceilings and coves. The wall fixture in the general bake goods section is worthy of note; it provides indirect lighting sources for the illumination of the built-in cove above and also, by the use of tilted plate glass shelves, clearly displays well-lighted merchandise against a luminous background.

Ceilings and walls above light coves are of soft lemon yellow. The under sides of light coves are green. The left side of the shop is painted red rouge color to match the marble of the entrance vestibule. The floor is light beige terrazzo. Natural wood counters and fixtures are of bleached oak.

HOW THE WELL-LIGHTED STORE SHOULD LOOK

Broadstreet's, Fifth Avenue, New York City

Kenneth C. Welch, A.I.A., Architect

THIS men's shop in the medium-price field goes all out to attractively display as much of its merchandise as possible. In doing so it incorporates the interior lighting principles set forth by its architect at a recent engineers' conference.*

Mr. Welch believes that a store should keep as simple a total environment as is compatible with the atmosphere desired. This is done first, by keeping the apparent brightness of the lighting equipment itself reduced to a minimum (its effect should be seen but its appearance not heard). Second, by planning the interior so that the reflection factors and surface characteristics of the architectural and equipment surfaces will produce, when illuminated, brightnesses and brightness patterns that are simple in themselves. Mr. Welch assures us that conscientious use of these two principles will give merchandise full right of way.

The control of the directional distribution of light to best display the kind of merchandise being illuminated is also an important point. It is possible with good de-

*Conference of the Milwaukee Chapter of the Illuminating Engineering Society, May 19, 1949.

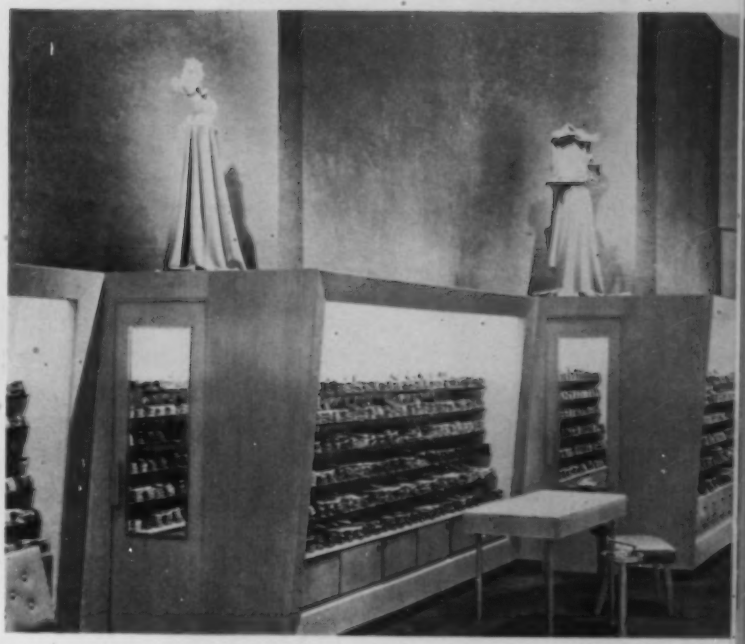
Section at right clearly indicates general lighting scheme. Fluorescent tubes behind metal grids are combined with spotlights for added illumination of merchandise appraisal areas. Also shown are lighting details of shirt fixtures (illustrated in photograph at left) and neckware display cases (illustrated upper right). Note the high quality of display lighting combined with low brightness of lighting equipment, simplicity of architectural surfaces and brightness patterns

sign, using the proper reflectors and lenses for control, to produce the highest brightness on fashion apparel or soft goods of diffuse texture. This attracts the customer and saves equipment and electrical energy as areas used for display of this kind are small. On the other hand, merchandise such as silverware, appliances and automobiles, with primarily specular surfaces, need an overhead or surrounding brightness pattern which does most to bring out their form. Low brightness incandescent or fluorescent lights, or both, surrounded or partly reflected to other architectural surfaces are obviously the best answer in these cases.

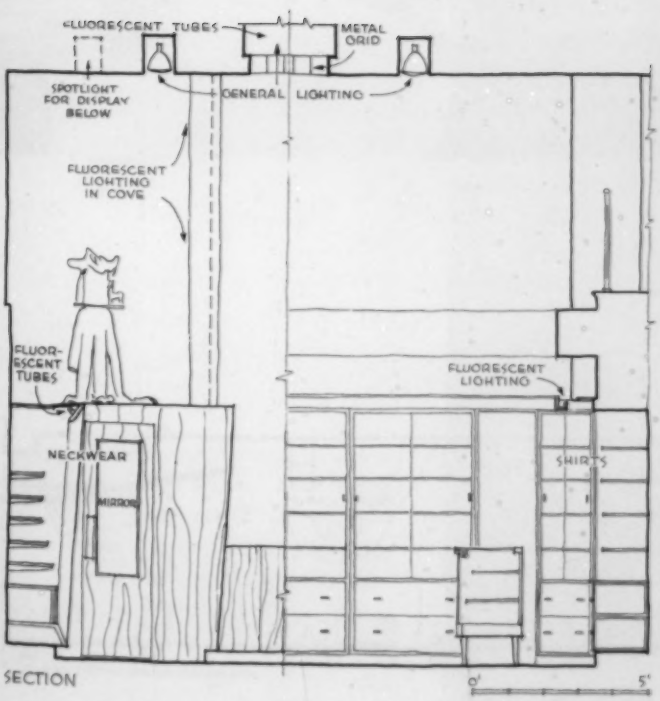
The use of a combination of fluorescent and incandescent light sources in even distribution to bring out correct color values is generally advisable. Incandescent alone accents the yellow and red colors; common fluorescent sources exaggerate the blues and purples.

Lastly, Mr. Welch emphasizes that the artificial lighting equipment used in a store must appear to be an integral part of the structure. This does not necessarily mean the use of special built-in equipment, but, preferably, simple, direct design with the use of mass-produced and packaged equipment.

The photographs and typical section of Broadstreet's illustrate how these simple but basically important lighting principles can be put to good merchandising use.



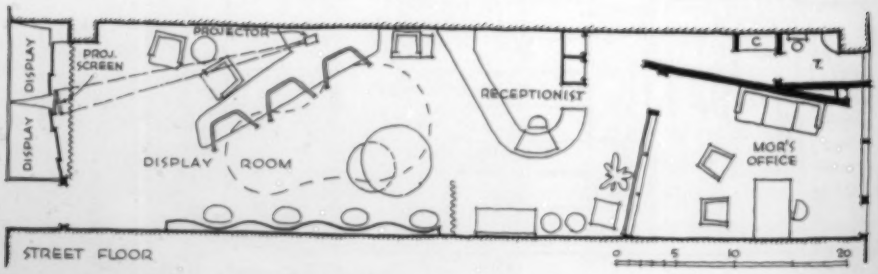
Ceiling is an off-white, walls are blended shades of gray, blue and warm tan. Carpet is rust colored. Fixtures are light oak.



CORY SHOWROOM, LOS ANGELES, CALIF.

Maynard Lyndon, Architect

Merge Studios



The curving acoustic tile panel is painted dark blue; the wall behind is claret; opposite wall is light blue. Dark green was chosen for the suspended ceiling panel; the high ceiling is yellow. Rear curtain is claret matching wall; front curtain concealing street window display is gray

THE essential planning problem of this dealer's showroom was to provide for the efficient display of current items of manufacturer's equipment and current advertising without alteration of permanent walls, ceiling, doors, or shop front. In solving this problem the architect has created unusually refreshing and original space arrangements and backgrounds through the studied juxtaposition of contrasting geometrical forms.

The principal display area with its most dramatic background — three curved plywood display recesses — has been developed in widening perspective directly off the street entrance. These three plywood recesses, which intersect a continuous black table, have dark blue linings, all other surfaces natural wood. An adjustable display table arrangement, permitted by pivotal small table that swings under large one, is also a feature. Facing the plywood recesses is a curving wall of composition acoustic tile which provides a background for the display of current advertising. Models featured in advertising are shown on small rounded tables cantilevered forward at the lower edge of the tile.

The whole display area, faced and controlled by the large curved receptionist's desk, has a suspended panel ceiling introduced to provide scale and unity and accommodate concealed spotlights.

The space directly to the left of the entrance, behind the principal display features, has been organized for the projection of slides and movies of manufacturing processes, successful sales techniques, etc. Coffee is served in this area.

The long curved receptionist's desk has white linoleum top, natural birch sides. The display fixture at left of desk has built-in mirror to show bottom of equipment. Pivoted tables in center of the display area are natural mahogany. Translucent wall conceals manager's office

Elwood M. Payne Photos

SHOE DEPARTMENT

SPORT COATS AND SLACKS

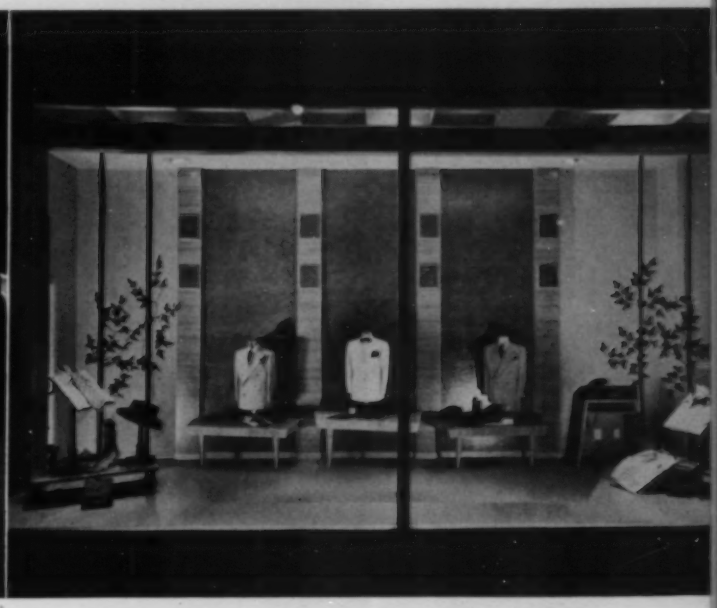
PAGING THE DISCRIMINATING TRAVELER

Shamrock Hotel Men's Shop, Houston, Texas

Brochstein's, Inc., Designers

CLOTHING

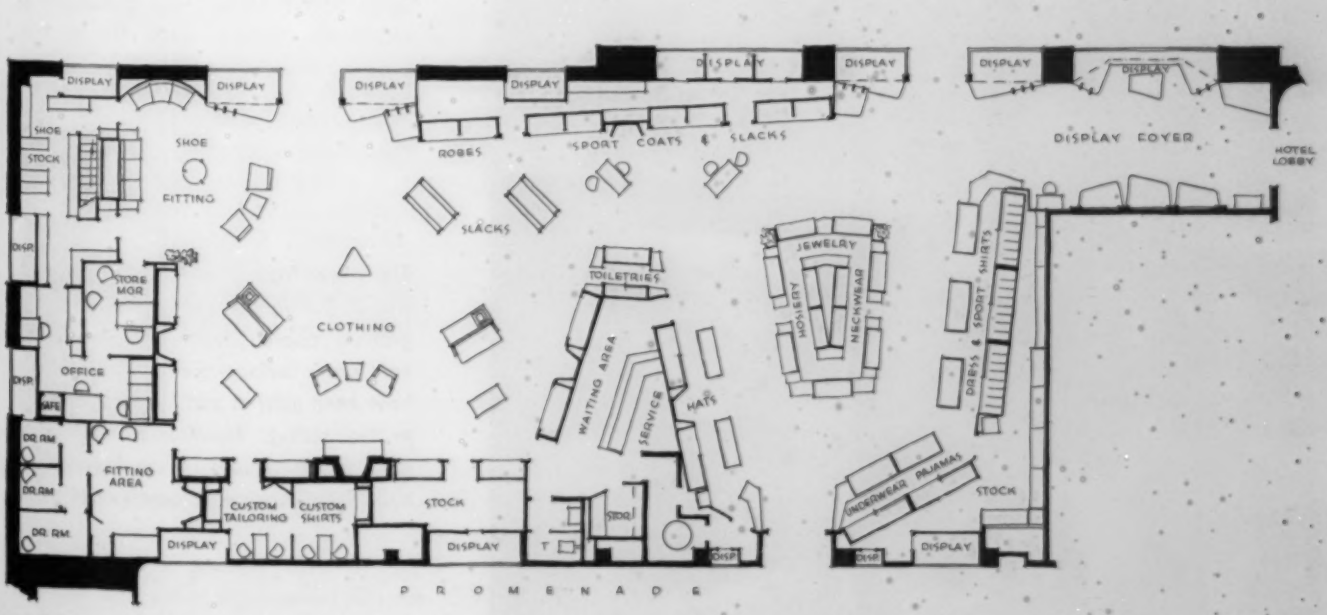
TOILETRIES



DISPLAY FOYER

THIS shop, in the words of the designers, has been "fashioned to attract the discriminating masculine trade which daily converges at the hotel, now a southern crossroads of the nation". Atmosphere, of the lush, clubby, substantial masculine variety, has been created here at considerable expense and with no holds barred to coax browsing customers into an expansive purchasing mood. Display is used for merchandising appeal also, but in a restricted, selective sense, subordinate to the overall atmosphere pattern.

The center of attraction of the well departmentalized store is the clothing section with its wall-carved mahogany mural which occupies a recess over the massive split-stone fireplace. The pomegranate red leather upholstered furniture, the cushioned settees, exotic woods, and end tables with specially designed lamps all convey an impression of comfort and elegance. Here in the privacy of well-appointed display rooms clients may also select woolens and fine linens for individual tailoring and shirting. Adjoining space provides fitting areas.



Elwood M. Payne Photos

SHIRT DEPARTMENT

This same decorative theme is carried all through the store, much of the merchandise being concealed in the interest of controlled atmosphere. Exceptions are the toiletries counter where display levels in the background are individually lighted and the wall fixtures in the shirt and hat departments where slots have been left in sliding doors so that customers may have a dignified peek at stock.

It is of interest to note in the illustrations of the shoe and the sportswear departments that the interior displays are well integrated with window displays which face the streets.

HAT DEPARTMENT

The store fixtures are South American walnut. Furniture is upholstered in pomegranate colored leather. Carpeting is light gray; ceilings mocha. Potted plants have been used to add freshness and life to the setting. Handcarved mahogany plaques in background of the display foyer depict resources and progress of Houston

LIGHT SLABS AND BLOCKS FOR THIN CURTAIN WALLS

Two backup wall materials meet stiff tests

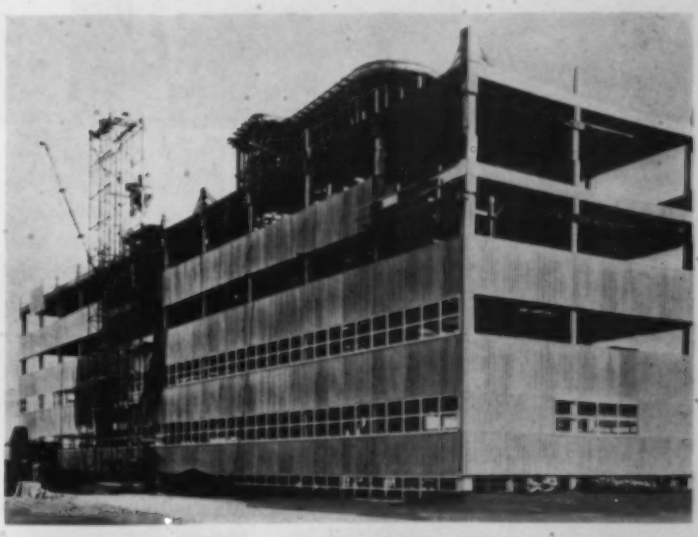
A THIN, lightweight curtain wall has many recognized advantages — lower construction costs, increased rental area, savings in structural framing and foundations. Yet, any backup material used to achieve these, in addition to being thin and light, should be a good insulator, capable of being handled easily and with little breakage, and still have adequate strength and fire-resistance to meet the building codes.

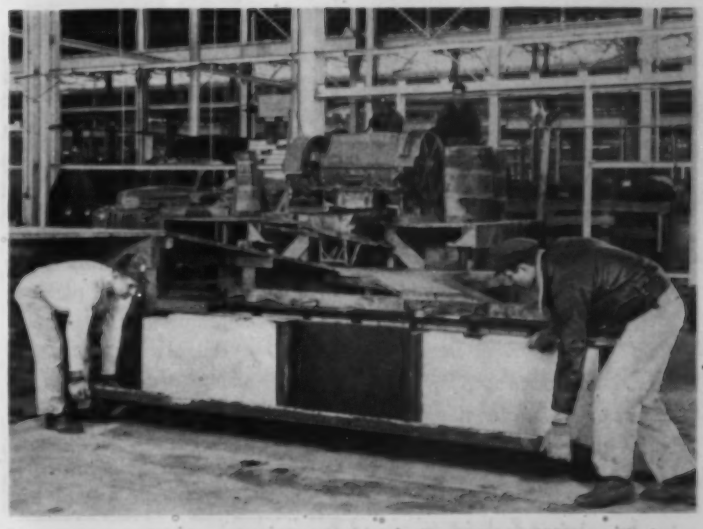
Extensive research along these lines has recently resulted in precast slabs and blocks which have earned a 4 hr. fire-retardent rating for non-bearing walls from Underwriters' Laboratories, Inc.

Lightweight Wall Slabs in Alcoa Building

Developed for use in the 4½-story Aluminum Company of America administration building at Davenport, Ia. is a precast slab made of Portland cement and calcined diatomaceous earth aggregate. The wall, consisting of cast aluminum panels backed by the lightweight slabs, has a total thickness of 9½ in. including the interior furred finish and an air space between aluminum spandrels and slabs. Aluminum foil, cemented to the inner face of the slabs, serves as a vapor barrier. Various sized slabs were used, although most of them are 2 ft. 9 in. high and 4 ft. wide.

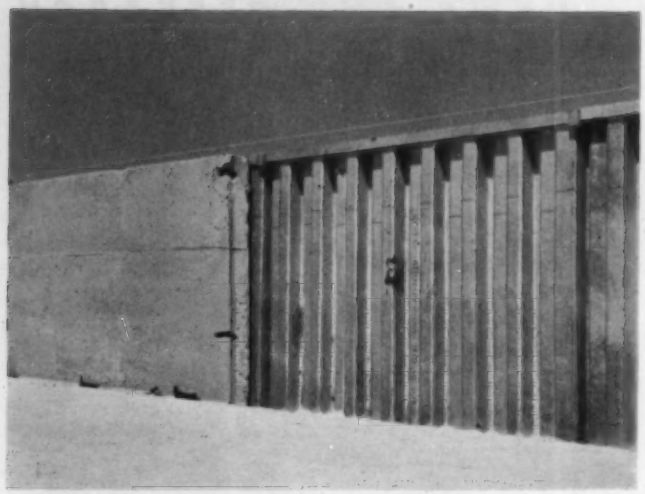
In construction of the Alcoa building, designed by Harrison & Abramovitz, Inc., Architects, all scaffolding, rigging and derricks were eliminated since all sections of the wall could be installed



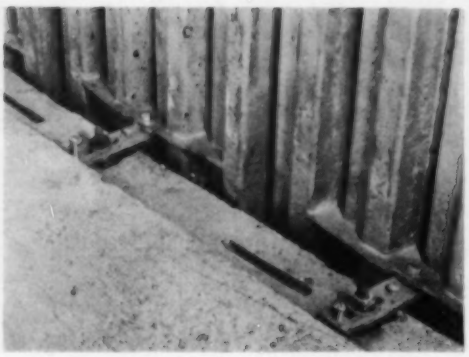


Alice Cook Photos

Top: Alcoa administration building has 9½ in. wall comprised of cast aluminum panels backed by lightweight concrete slabs. Center: precast slabs, poured on the site, are removed from the molds. Bottom: size and lightness of slabs makes them easy to handle

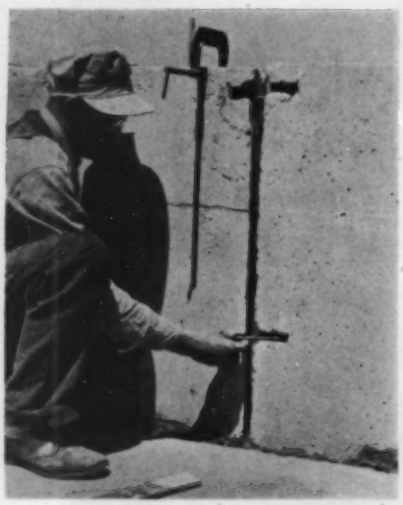


Alice Cook Photos



Photos courtesy of Great Lakes Carbon Corp.

Upper left: 4-in. thick lightweight concrete panels, made with calcined diatomite aggregate, are set on top of spandrel beam in a special mortar. Right: corrugated, aluminum panels are easily fastened to the spandrel beams by means of cast anchors, cutting erection time



Above: backup panels for Alcoa building are tied together with steel rod dowel pins; open space around pins and between panels is later filled with mortar. Below: aluminum foil, cemented to inner face of panels, is the vapor seal

from within. Erection time was speeded through the use of cast anchors on each aluminum panel which were fastened directly to the spandrel beams.

The doweled, precast slabs, reinforced with wire, were designed to withstand a wind load of 60 lb. per sq. ft. on a 10 ft. span and to conform with the New York City building code.

Cost of the backup wall was $1.00 per sq. ft., erection costs 38 cents per sq. ft., and furring and plastering costs were 25 cents per sq. ft.

All slabs were poured on the site, using a mix ratio of one part Portland cement to six parts aggregate. They can, however, be shipped without difficulty.

The slabs can be used in exterior or interior non-bearing walls, but should be protected in exterior uses by some weather-resistant material. The weight of this light concrete is about one-half the dry installed weight of regular concrete. And a 6-in. thick wall of it conducts only one-fourth as much heat as regular concrete. Depending on the proportions used, it has a compressive strength of from 1000 to 1500 psi. The concrete made with calcined diatomaceous earth is said to mix well in standard mixers without segregation.

Tests over a period of several years to develop the backup wall for the Alcoa building were conducted by the builders, George A. Fuller Co., with their chief engineer, Peter Dejongh, in charge.

Calcined diatomite concrete slabs have also been used by the Fuller Co. in the General Cable building, St. Louis, Mo., and in a hospital now under construction at Bradford, Pa. They are proposed for use in the 30-story Alcoa skyscraper, scheduled to be built next year in Pittsburgh.

Lightweight Blocks for Curtain Walls

Lightweight blocks, 4 by 8 by 16 in., formed the backup wall in the Employers' Casualty Insurance building in Dallas, Texas. In this building, 17,000 of the blocks were used, made with the lightweight aggregate, perlite. The blocks are similar to ordinary cinder blocks, except they are only half as thick. A non-bearing wall built with them also has a 4-hr. fire rating, and is designed to meet the requirements of the New York City building code. The architect was George Dahl and the general contractor, James Stewart Corp., both of Dallas.

It is expected that perlite will soon be used for the large slabs as well as blocks

NOISE REDUCTION IN DWELLINGS

by Albert London, Physicist

National Bureau of Standards

Washington, D. C.

The lack of privacy resulting from transmission of sound and vibration through walls and floors of dwellings has become somewhat of a problem. Yet considerable technical acoustical knowledge in the design and construction of buildings is available, much having resulted from fundamental and applied research at the National Bureau of Standards. Dr. London, a physicist of the Bureau's Sound Laboratory, points out some of the general principles of sound control in this article, together with the applications of these principles to problems occurring in dwellings.

Principles of Sound Control

The methods by which noise reduction may be obtained involve essentially three different procedures: (1) control of sound sources; (2) sound absorption; and (3) sound insulation, with which this article is mainly concerned.

For any given situation, remedial action may be obtained by using the three methods singly or in combination, depending on the relative applicability and cost of each.

As an example of the first procedure we may consider the case of a person who decides to build a house in which he wishes a minimum of noise from external influences. The simplest procedure is for him to select a site which is inherently noise free. If he should choose to use a lot located on an arterial highway, he could not hope to cope with the traffic noise unless he were to use an expensive sound insulating scheme. Or again, if he desires to air-condition a room or rooms in his house he should choose a quiet operating unit rather than depend on an expensive sound absorbing duct, and might find it desirable to operate the unit at lower cooling rates to obtain quiet operation. And as still another example, the vibration generated by mechanical and home equipment located in the basement may be reduced at its source by mounting the equipment on a suitable vibration insulating base. All of these examples, while more or less obvious, are typical noise troubles resulting from lack of planning, unwise selection, or from overlooking the control of sound at its source. It cannot be too strongly emphasized that the first step in noise reduction is the control of sound sources, by elimination, site selection, or choice of operating conditions for equipment, etc.

When all possible steps for reducing sound at its source have been accomplished, it is then advisable to consider the use of sound absorption or sound insulation to further reduce noise levels. Sound absorption and sound insulation are different and distinct physical phenomena and where the distinction between the two occurs may be seen from the following illustration. In a factory where the din is terrific, workmen are subjected to the effect of incessant noise. And people who live in the neighborhood may complain about the unbearable racket. Here there are two distinct problems to solve: one is to reduce the sound level within the building to relieve the employees; the other is to prevent the noise from leaving the building in order to pacify residents in the vicinity of the factory.

To set the neighbors at ease, the walls must be changed so that they become more effective sound insulators. It is possible to obtain better efficiency in several ways, one of which is to increase the weight of walls considerably. The heavier wall transmits less sound, but to secure the additional insulation desired a more complicated solution may be necessary.

Such a wall does not, however, give respite to the workmen; the noise is still just as loud on the inside. The application of sound absorbing materials to the walls of the interior will effect a substantial reduction in loudness. Furthermore the use of absorption in the interior also aids in reducing the sound level outside the building and to the same extent as the inside. In this sense, the utilization of sound absorbents may be said to have some sound insulating value. However, since it is usually not possible to secure a reduction of more than 10 decibels by this means, it is necessary to make special provision for sound insulation. The decibel, for those not too familiar with the term, is the acoustician's yardstick for measuring sound levels and changes in sound level. One sound level is 10 decibels (db) greater than another if its sound energy or intensity is 10 times greater than the other; it is 20 db greater if it is 100 times larger; and 30 db if it is 1000 times larger. In other words, each time the ratio of sound energies is increased tenfold the sound level increases 10 db.

Sounds at the upper limit where hearing becomes painful are 120 db greater than the sound levels at the threshold or limit of audibility — an energy ratio of 1,000,000,000,000 (one million million). At the upper limit, soupds of this intensity are painful, while at the lower limit the sound is just barely heard.

In addition to specifying sound level differences it is often necessary to state the actual value of a given sound intensity. For this use, it is customary to use a decibel scale in which 0 db is very close to the threshold of hearing, and 120 db is the threshold of pain. On this scale the sound level of a purring cat is 25 db, normal conversational level about 50–70 db, subway noise 90 db. Sound levels as large as 150 db have been measured close to a V-1 type jet bomb.

As has been mentioned, a basic difference between the use of sound absorbing materials and sound insulating constructions for reducing noise levels is that sound absorbing materials as us-

ually applied to a wall can at most reduce noise levels by about 10 db. Sound insulating constructions, on the other hand, may be designed which reduce noise levels as much as 55 to 60 db and it is possible to go even higher than that with elaborate constructions.

While sound absorbing materials may not be very efficient in preventing the transmission of sound through walls they may be used to great advantage in reducing the reverberation of sound within a room. The reduction of reverberation is not usually a problem in the small rooms of dwellings since there are sufficient sound absorbing materials present, such as rugs, drapes and upholstered furniture, which readily ab-

SOUND TRANSMISSION LOSS OF WALLS

Type of Construction	Weight* lb./sq. ft.	Transmission Loss Range, db	
		From	To less than
a. 4 in. hollow pumice cement block, no plaster on faces	15.5	10	15
b. Single sheet of aluminum .025-in. thick	0.35	15	20
c. Single sheet of ¼-in. plywood	0.73	20	25
d. Single sheet of ½-in. fiberboard	0.75	20	25
e. Single sheet ⅛-in. glass	1.6	25	30
f. One sheet of 1-in. cement-asbestos-cane fiber composition board on 2 x 4 wood studs on one side only	4.0	25	30
g. Double wall, ¼-in. fiberboard faces on 2 x 2 wood studs	—	25	30
h. Heavy wooden door approximately 2½-in. thick; rubber gaskets, felt strip at bottom to close crack	12.5	25	30
i. Single sheet of ¼-in. plate glass	3.5	30	35
j. ½-in. gypsum plaster on metal lath on one side of ¾-in. steel studs	8.1	30	35
k. Same as panel "a" with ½-in. gypsum plaster on one side only	20.4	30	35
l. 2-in. solid vermiculite plaster partition	8.8	30	35
m. Same as panel "a" with ½-in. gypsum plaster on both faces	25.3	35	40
n. 2-in. solid gypsum plaster partition	17.0	35	40
o. ½-in. gypsum plaster faces on metal, wood, or ⅛-in. gypsum lath nailed to 2 x 4 studs	15.0	35	40
p. Same as "f" with composition board on both sides of studs	8.3	35	40
q. ¾-in. plasterboard faces on 2 x 4 studs	8.3	35	40
r. 7½-in. thick panel, 2 rows 2 x 2 studs ½-in. fiberboard set loose in 2-in. space between rows of studs; ¾-in. fiberboard on outer faces of studs (Fig. 1)	6.2	40	45
s. 4-in. structural clay tile core or 4-in. hollow cinder block. ⅝-in. gypsum plaster faces	30 to 40	40	45
t. 2 x 4 wood studs, ½-in. gypsum plaster faces on ⅜-in. gypsum lath special nailing or resilient clip on plaster lath (Fig. 2)	14	40	45[1]
u. 2⅞-in. thick partition; ½-in. fiberboard core attached to plasterboard by means of steel clips; ¼-in. airspace on each side of fiberboard; ½-in. gypsum plaster faces (Fig. 3)	15.9	45	50
v. Similar to "t"; a more efficent clip was used	14.3	45	50[2]
w. 4, 8, and 12-in. load-bearing clay tile ⅝-in. gypsum plaster faces	37 to 65	45	50
x. 6-in. wall; 2 x 4 staggered wood studs ⅞-in. gypsum plaster on metal lath (Fig. 4)	19.8	45	50[3]
y. 4-in. reinforced concrete wall	53.4	45	50
z. Two 2-in. solid gypsum plaster partitions as in "n"; not in contact with each other. Wall thickness 4½-in.	17.2	50	55
aa. 5-in. partition, ¾-in. gypsum plaster faces on metal lath, fastened to special metal studs, glass insulation board between stud and metal lath (Fig. 5)	—	50	55
bb. 8-in. brickwalls, ½-in. gypsum plaster faces	45 to 97	50	55
cc. Two 4-in. brickwalls or two 4-in. concrete walls separated by a 3-in. airspace		greater than 55.0[4]	

* *This is the weight in pounds per square foot of surface of the construction.*

1. *Varies considerably with design of clip and weight of panel. Some constructions with clips may be slightly less than 40 db.*
2. *One particularly efficient clip resulted in a loss slightly greater than 50 db.*
3. *This panel gave a loss of 49.8 db. Other staggered stud constructions are somewhat better than 50.0 db.*
4. *This result is estimated. No measurements available.*

The ratings given are usually the most probable range of values to be expected from a given class of partitions, but some test results may fall slightly outside of this range. Minor variations in weight or method of construction cause some fluctuation in the results so that it is more pertinent to group the results into transmission loss intervals of 5 decibels.

sorb sound. Consequently the use of absorbing materials in dwellings will not be discussed in any great detail in this article.*

Sound Insulation Ratings of Walls and Floors

A measure of the sound-insulation efficiency of a wall or floor structure may be obtained by determining the sound-transmission loss in decibels. The latter is merely an expression of the amount by which sound energy incident on a wall or floor between two rooms is reduced by its passage through the wall or floor.

Whether a given partition or wall will provide adequate insulation depends to a large extent on the existing noise levels in the spaces or rooms separated by the wall. For average conditions in apartment buildings and other dwelling units, it has been found that a wall or floor having an average transmission loss of 45 db will reduce conversation at normal speech levels to inaudibility. Some housing projects have used partitions having a loss as low as 40 db. Under quiet conditions ordinary conversation transmitted through a 40 db partition will be audible and partially intelligible. If the noise conditions are more severe than normal or if exceptional quiet is desired it may be necessary to use a wall with a higher rating. Thus in the case of hospital partitions it is advisable to use a 50 db partition.

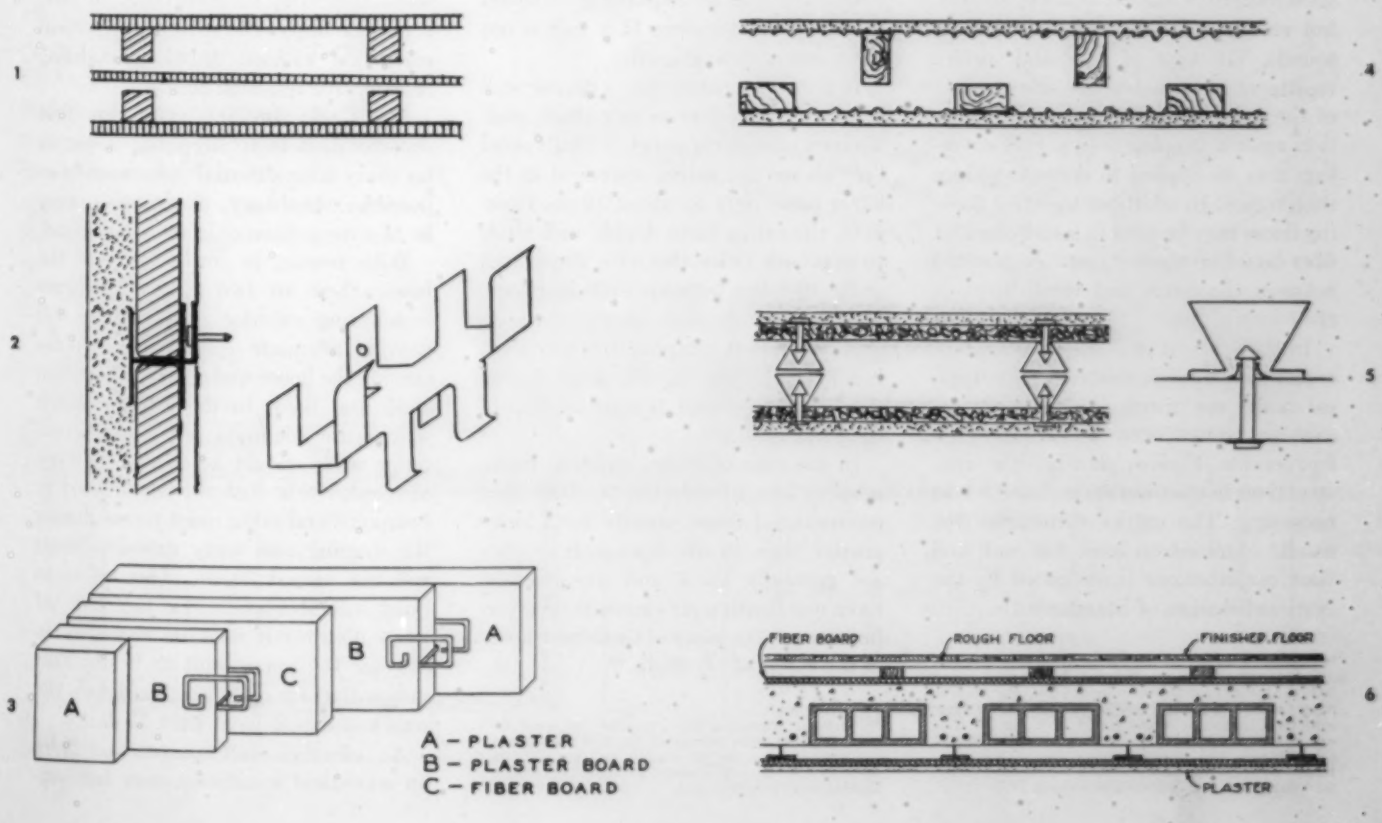
Two important factors which determine the transmission loss of a wall or floor are weight and method of construction. For a homogeneous partition the sound-transmission loss increases slowly as the mass is increased. If the weight is doubled, the loss is increased by approximately 4 db. A homogeneous wall must be relatively massive to give satisfactory sound insulation. For example, a thin steel wall and a thick plywood wall having the same weight per square foot of construction surface would have approximately the same transmission loss. Furthermore, the sound transmission loss of a homogeneous wall is, to a large extent, independent of the wall material, provided the material is not porous.

Efficient sound insulating structures without excessive weight may be constructed by connecting the individual lamina in the partition as loosely as possible. Wood-stud partitions finished with plaster or plasterboard lath fastened with resilient spring slips are examples of this type of construction. Also staggered stud constructions, in which two sets of independent studs are used, one for each face of the wall, is another example of a loosely coupled wall.

The question often arises as to the utility of installing a sound absorbing blanket or fill in an airspace of a double wall. Extensive tests indicate that only for light walls is a decided improvement obtained. For walls of moderate weight there are usually solid sound conducting paths in the nature of studs, nails or other connections. The fill in the airspace, therefore, is not very effective, at most only a 2 to 4 db improvement being obtained. Consequently, the use of such a fill is not recommended from the cost viewpoint. If fill is required, however, for thermal insulation, it should not be packed too tightly in the space since it may cause an actual increase in transmitted sound as a result of tying

* *For information on the use and ratings of such materials see National Bureau of Standards Letter Circular LC 870, Sound Absorption Coefficients of the More Common Acoustic Materials, which is available free upon request from the National Bureau of Standards.*

Figs. 1 to 5 below illustrate wall constructions listed in the table opposite for reducing the transmission of airborne sound. Fig. 7 shows a floor-ceiling construction for insulation against impact or tapping noises. The rough and finished floors are laid on fiber board through the use of nailing strips instead of directly on concrete; similarly, the ceiling is suspended by wires



the walls together more solidly.

Variation in kind and proportion of plaster has no decided effect on the sound-insulation efficiency provided the weight of the panel is approximately the same. Lime plaster is an exception. In comparable sound-transmission tests, lime-plaster partitions have shown higher sound-insulation efficiencies than gypsum plaster partitions. Apparently this is caused by the greater internal friction resulting from the softness of the lime plaster. Recently lightweight plaster aggregates which have heat-insulating value have been investigated. On an equal thickness basis these are poorer sound insulators than gypsum plasters, since they are lighter in weight. On an equal weight basis, they probably are as good or even better than gypsum plaster walls.

In addition to insulating against airborne sounds it is necessary to prevent the transmission of impact sounds. Airborne sounds are those that originate within a room or space, are carried through the air, and then through walls, partitions, or floor. Impact sounds are those caused by tapping or other mechanical contacts, such as heel clicking. Floor or other constructions may be good insulators against airborne sounds, but very poor insulators against impact sounds. The type of floor and surface treatment determines the effectiveness of the construction in providing insulation against tapping noises. Soft coverings may be applied to floors to reduce such noises. In addition, so-called floating floors may be used in which resilient fiber board or blanket units are inserted between the rough and finish floors of the construction.

In the table on page 142, the airborne sound-transmission losses of some typical walls are listed. The ratings are average transmission losses for audio frequencies. Figures showing the constructions in question are included where necessary. The entries summarize the results obtained on some 250 wall and floor constructions investigated by the National Bureau of Standards.†

† *For complete details see National Bureau of Standards Building Materials and Structures Report, BMS17 and Supplements Nos. 1 and 2, which may be obtained from the Superintendent of Documents, Washington 25, D. C. for 35¢ a set; and also Technical Report on Building Materials, TRBM44, Fire-Resistance and Sound-Insulation Ratings for Walls, Partitions and Floors, which is available free upon request from the National Bureau of Standards, Washington 25, D. C.*

It may be of interest to analyze some of the data of the table since it will serve to illustrate some of the principles involved. The poor insulating qualities of a moderately massive wall which is porous is evidenced by the results on panel "a". In this case the sound is transmitted through the pores, the mass of the wall having little effect. When the wall was plastered on one side, the transmission loss (TL) increased approximately 20 db (panel "k") and when both sides were plastered, its TL range was increased to the 35–40 db class (panel "m"). This indicates the importance of having a truly impervious partition with no air leaks. Thus, cracks around a baseboard, cracks due to electrical outlets, or to plumbing pipes passing through a wall should be carefully sealed.

Panel "h" shows that even a fairly heavy door is a poor insulator. The only safe way to remedy the situation is by the use of two doors in a double door combination. Here too, cracks between the door and jamb and bottom sill should be carefully treated or closed off by felt or batten strips. Glass windows in a wall are also weak links in an otherwise good wall. Double-glazed or double windows are required if the sound insulation effectiveness of a wall is not to be seriously weakened.

It should be noted that a double wall is not twice as effective as a single wall. Thus on comparing panel "f" with panel "p" we see the rating improved in the latter panel only by about 10 db. However, the rating for a double wall tends to approach twice that of a single wall as the distance between walls increases. If instead of the 4-in. airspace used in panel "p", a 6-ft. airspace were provided, it is probable that the TL of the double wall would be twice as large as that of the single wall.

In the case of floors, airborne transmission loss measurements show that conventional floors usually have losses greater than 40 db. Inasmuch as they are generally thick and massive and have non-continuous elements or layers built into them many of them have losses in the range of 50–60 db.**

** *No attempt at grouping floors into classes having a 5 db TL range has been made because of the many variations and modifications used in the floor constructions. For constructional details on floors the original reports BMS17 and supplements or TRBM44 should be consulted.*

In insulating against impact or tapping noises, the important consideration is to provide non-continuous elements in the floor so that the vibration caused by the impact does not have a continuous sound-conducting path. Such a construction is illustrated in Fig. 6 which comprises a floor "floated" on fiberboard and a ceiling suspended by flexible wires. This construction is not only an effective airborne sound insulator, its loss being in the range of 65–70 db, but is also effective against impact noises (50 db tapping loss).

Acoustical Design Applied to Single Dwellings

In planning any type of building construction, whether it is a single or multiple dwelling unit, auditorium, meeting hall, office building, or hospital, it is extremely important to include appropriate acoustical design in the initial plans. Usually it is not possible to remedy existing acoustical defects by the application of magic "soundproofing" to the walls of a room. The term "soundproofing" is frequently misused, as a consequence of which it is not always clear whether reference is being made to sound absorbing materials or sound-insulating constructions. In fact, it may be impossible to apply acoustical correction without drastic remodeling or extensive remedial action.

For single dwelling units, the first consideration is to keep the house as far away from external noise sources as possible. Shrubbery, if extensive, may be of some assistance in reducing sound.

With respect to construction of the house, there are two distinct problems — selecting exterior walls which will provide adequate insulation for noise outside the house and choosing partition walls and floors in the interior which will assure adequate privacy. The exterior walls should be of such a type of construction that the sound level in bedrooms and other quiet rooms during the evening and early morning hours will not exceed 30 db. This refers to quiet neighborhoods. In the case of noisy districts it may be necessary to increase the upper limit to 40 db. This means that for quiet neighborhoods the wall loss should be at least 45 db.

An effective wall construction from an acoustical standpoint may be com-

pletely destroyed by cracks such as those caused by settling of a brick wall, shrinking of wood, or other openings in the wall. Thus it will not be possible to maintain a low interior noise level if windows are kept open. In fact, the use of windows of single panes of glass installed in an 8-in. brick wall materially reduces the insulation effectiveness of the wall, in which case it may be found desirable to install either double windows or those having double panes of glass.

Large picture windows made of single panes of glass will greatly reduce the effectiveness of a 45 db wall. They should be double glazed if possible, not only for sound insulating purposes but also for thermal insulation. On the other hand, windows made of 4⅞-in. thick glass bricks have a transmission loss of 41 db, so that this type of window or wall is much better than a single glass pane.

Doors must be fitted into their casings quite snugly if sound leaks are to be avoided and should be fairly heavy and substantial to be good sound insulators. In cases where houses are located near areas carrying heavy truck, trolley car or train traffic, there may be considerable ground vibration which will shake the house. In order to prevent the transmission of this vibration it would be necessary to pour the footings of the house on a resilient bed of suitable nature.

With respect to the interior construction of the dwelling, room placement according to function is of considerable importance. For example, quiet rooms, such as bedrooms, should be located in the same general area. If it is necessary to locate a noisy room next to a quiet one, a suitable partition, having at least a 45 db loss should be installed between them. In addition, if privacy is required between bedrooms it is believed that 45 db partition walls should be used.

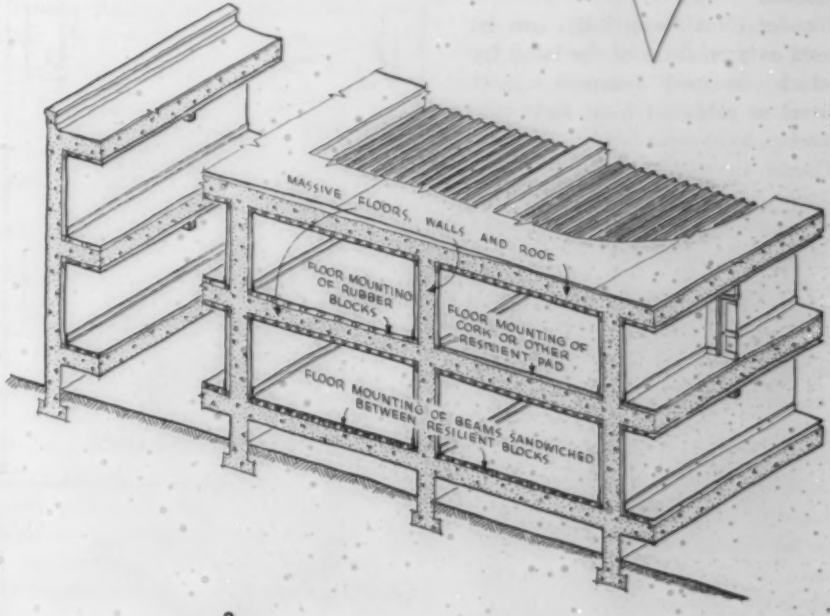
An attic usually provides adequate insulation against penetration of outside noises to lower floors of the house by way of the roof. A fairly substantial ceiling at least equivalent to ¾-in. plaster should be provided.

Similarly, it is often the case that no ceiling will be provided in the basement. Noise due to mechanical equipment which may be located in the basement will readily be transmitted through a construction consisting only of a rough and finish floor nailed to joists. It would, therefore, be advantageous to install a ceiling on the underside of the floor joists. Fiber board ceilings are often used in basements, but are too lightweight to be very effective. A fairly massive ceiling, equivalent to ½ to ¾ in. plaster and suspended by flexible hangers or wires is more effective than one directly attached to the joists from both sound insulation and fire protection standpoints.

For reducing the transmission of vibration caused by mechanical equipment in the basement, it may be neces-

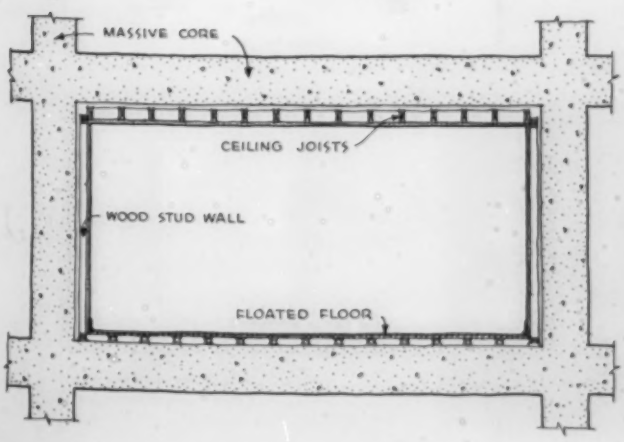
(*Continued on page 184*)

7


MASSIVE FLOORS, WALLS AND ROOF
FLOOR MOUNTING ON RUBBER BLOCKS
FLOOR MOUNTING OF CORK OR OTHER RESILIENT PAD
FLOOR MOUNTING OF BEAMS SANDWICHED BETWEEN RESILIENT BLOCKS

One method to get sound insulation between multiple dwellings units is the massive core construction shown at right. In each "cell" a secondary box of the types shown below is built and subdivided into the desired number of rooms. At left, below is a rigid, self-supporting box, supported on the core structure by a floating floor. At right, below is shown a box with suspended ceiling, loosely coupled wall, and floating floor. The massive core also can be constructed so that an air space separates each cell

8



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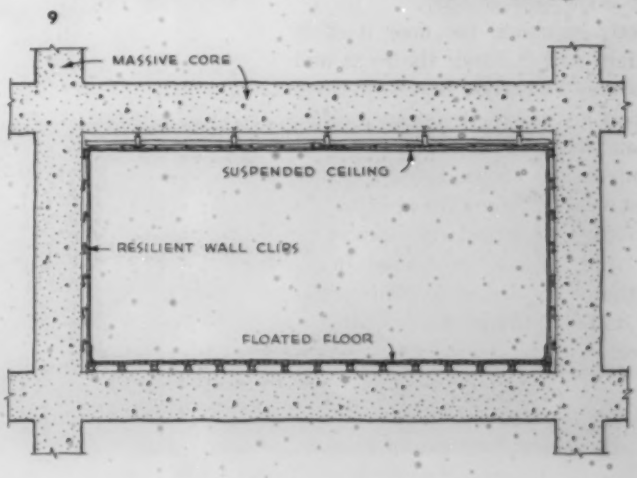


HARDWARE—1: Hand of Doors, Casement Windows

By Seymour Howard, Architect, in cooperation with American Society of Architectural Hardware Consultants

CONVENTIONS for the hand of hardware must be determined accurately so that there is no misunderstanding between specification writer, dealer and manufacturer.

Hardware in general may be:

(1) *Universal:* can be used in any position (example, door stop)

(2) *Reversible:* can have "hand" changed by revolving from left to right or by turning upside down or by reversing some part of the mechanism (example, many types of locks and latches)

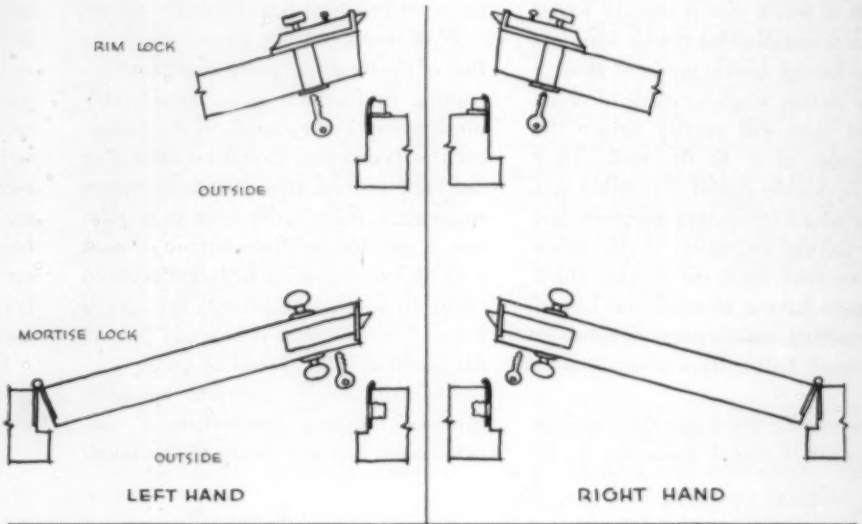
(3) *Handed* (Not Reversible): can be used only on doors of the hand for which designed (example, most bevel or rabbeted front locks and latches, loose-joint butt hinges).

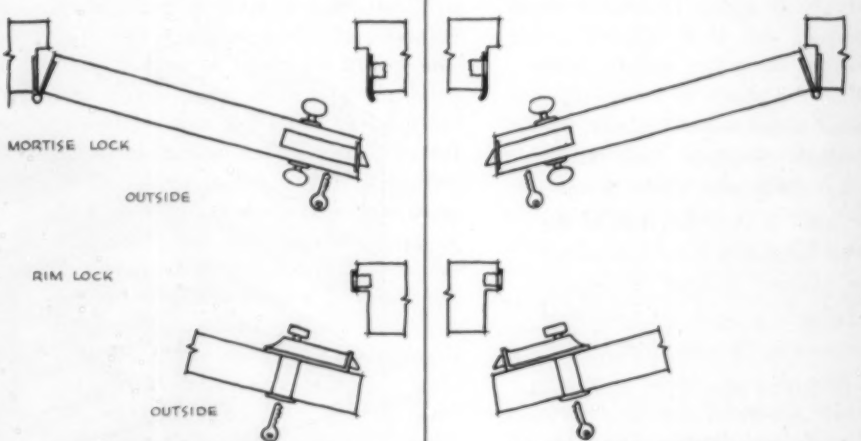
Although the hardware item specified may be reversible, or even universal, it is safe practice to state the hand completely, in accordance with the conventions shown here.

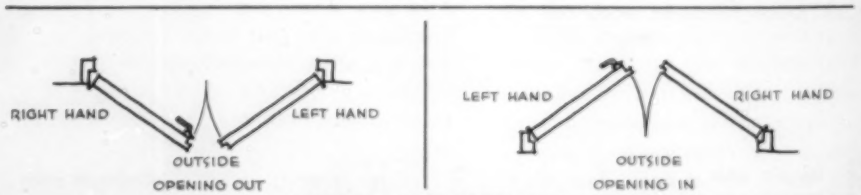
For all doors (except casements and doors with cremone bolts) the hand is determined from the *outside*. The outside is the side from which security is necessary. In a series of connecting rooms (as for a hotel suite) the outside will be the side of each successive door as you come to it proceeding from the entrance in. For two rooms of equal importance with a passage between, the outside is the passage side.

Strictly speaking, the door itself is only right or left hand; the locks and latches may be reverse bevel. However it is best to include the term reverse bevel and to specify in accordance with the conventions shown here. This will prevent any confusion over which side is the outside, particularly important when "split finishes" are desired. It will place the responsibility for the correct choice on the hardware dealer or manufacturer.

(TSS continued on page 151)

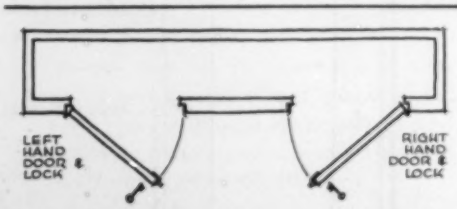




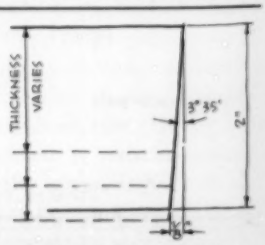


CASEMENT WINDOWS - SPECIFY WHETHER IN- OR OUT-OPENING
ALSO APPLIES TO CREMONE BOLTS

NOTE - THESE CONVENTIONS ARE EXACTLY OPPOSITE TO THOSE FOLLOWED BY THE METAL WINDOW INSTITUTE



CUPBOARDS, CABINETS, BOOKCASES
NOTE - REFRIGERATOR DOORS FOLLOW THESE CONVENTIONS



STANDARD BEVEL

DISPLAY RACKS, CASES

Architects Walter Wurdeman and Welton Becket have designed a new modular system of display racks and cases, utilizing only eight basic modules, which is said to be flexible enough to provide all the display and counter fixtures needed to equip an entire store.

Components of the *Wur-Ket* unit include three large open chassis, four inserts and a frame for converting the inserts into counters. The chassis are 4 ft. wide and come in heights of 4 ft. 8 in., 5 ft. 6 in. and 6 ft. Glass tops and open sides are used, and each chassis can be quickly fitted with either hanging rods or glass display shelves.

The inserts, wooden cabinets fitted with doors or drawers, are all 22 in. in depth and are designed to fit securely in the chassis without being bolted in place. Two smaller inserts can be quickly converted into counters by being placed in a wooden "saddle."

The modular display racks and cases will be introduced for the first time in Buffum's new store in Santa Ana, Calif. and are being made by the Wavell Fixture Co., Long Beach, Calif.

PLASTIC-LAMINATED PANELS

Lamidall wall paneling consisting of a decorative pattern impregnated on a base of tempered Presdwood and covered with a plastic surface is reported to withstand heat, cold, moisture, abrasion and impact. It is also said to be unaffected by water, soap, beverages, fruit juices, alcohol and common solvents, and is claimed not to crack, chip or peel.

Panels can be applied by nailing or cementing. They are available in a full range of sizes up to 4 by 12 ft. in a selection of colors, patterns and wood grains. Service Products Div., Woodall Industries, Inc., 2035 S. Calumet Ave., Chicago 16, Ill.

PLASTIC TAPE FOR VENETIAN BLINDS

A plastic tape recently developed for use with Venetian blinds is reported to be resistant to fading, weathering, stretching, shrinking, heat or cold and to be completely washable.

Another advantage claimed is that the colors are more brilliant than can be secured in fabrics because pigments are used rather than dyes.

The tape is of vinyl plastic reinforced with pre-shrunk threads, and thus is expected to last as long as the blind itself. Hunter Douglas Corp., 150 Broadway, New York 7, N. Y.

CONCRETE WALL PANELS

Two different types of insulated, concrete wall panels have been developed recently in Canada. The first is a sandwich panel having a 2 in. core of cellular glass covered by 2 in. layers of concrete (described in June Products for Better Building). In the other system, panels 16 in. wide and room height, insulated with aluminum foil, are used (shorter panels are used under windows). The panels are bolted together on the job and are keyed together with waterproof mortar. The reflective insulation is furred out from the panels and a furring strip separates the interior finish from the insulation; thus there are two air spaces provided.

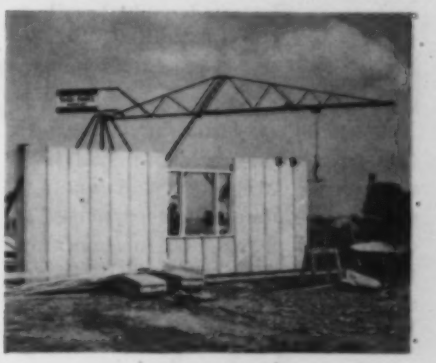
With specially designed form clamps, a reinforced concrete beam is poured at the top of the panels and window and door lintels, thus tying all the panels together. The first type is being manufactured by Creaghan & Archibald Ltd., 393A Fleet St., W., Toronto, Canada. The second type is made by Sa-Co Panels Ltd., 227 Lakeshore Rd., Humber Bay, Ontario.

Crane hoists sandwich-type precast panels into place (above). Derrick is used with 16-in. panels of another system (below)

SMOKE DETECTOR

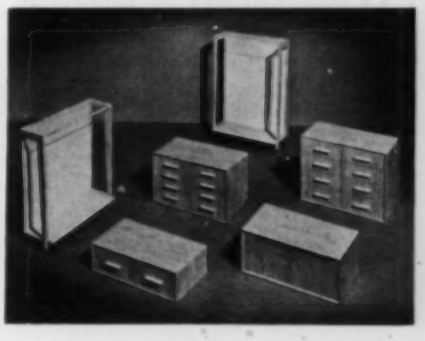
A *Multi-Space Smoke Detector* now on the market is intended for early fire detection in unfrequented plant areas, vaults, or warehouses where fire may smoulder and produce smoke long before flames actually break out and produce enough heat to actuate other types of protective devices.

In each protected zone, one or more accumulators are installed at the ceiling. These accumulators are connected to piping that leads to a control cabinet. Samples of air picked up by the accumulators are passed through an analyzer, and if three or more per cent smoke is present in any sample, the fire alarm rings. Concentrations of smoke lower than 3 per cent set off a trouble alarm. A numbered zone wheel, visible through the control cabinet door, indicates where the trouble is. A clean-out valve in the control cabinet opens after each space is sampled, and clean air is drawn through



(*Continued on page 188*)

Left: modular display system by architects Wurdeman and Becket consists of eight basic components, of which six models are shown. Right: some of the possible combinations



MANUFACTURERS' LITERATURE

School Daylighting

Better Environment Through Daylighting in Schools. Takes up the use of metal windows in the design of daylighting for schools. The booklet covers this subject under the following headings: How to Determine the Potential Daylight Available, How Metal Windows Provide the Best Source of Daylight Plus Controlled Ventilation, The Importance of Reflectance to Proper Daylighting, Basic Requirements for School Daylighting, How to Increase Illumination by Reflectance, Methods of Controlling Daylight Illumination. Other parts discuss orientation, cost, maintenance, and remodeling. 16 pp., illus. Metal Window Institute, 806 Roland Rd., Cheltenham, Pa.

Convectors

National Art Convectors (Catalog No. 555). Information on the construction, installation and operation of convectors in homes, stores, schools, offices and institutions. The copper tube, aluminum fin, heating element used with the convectors is illustrated and described. Reinforced sheet steel enclosures for free-standing, semi-recessed or wall-hung convector installations are reviewed. Dampers and air chambers for use with these convectors are shown and their advantages outlined. Installation and engineering data are included, as well as drawings of piping used in connecting the convectors to steam or hot water systems. 16 pp., illus. The National Radiator Co., Johnstown, Pa.*

Acoustic Telephone Booths

Burgess Acousti-Booths (Bulletin No. 172). Illustrates applications of sound insulated phone booths together with various models available. Describes acoustic construction. Price list is included. 6 pp., illus. Burgess-Manning Co., Libertyville, Ill.

Corrosion-Resistant Metal

Durimet 20 Corrosion Resisting Sheet & Plate (Bulletin 502). Lists properties of a special stainless steel, alloyed to possess a corrosion resistance higher than conventional 18-8 stainless steels. It is said to be especially suitable for laboratory fume ducts, hoods, table tops, troughs, etc. Describes fabrication methods and includes table of standard gauges, sizes, weights and finishes. 8 pp., illus. The Duriron Co., Inc., Dayton 1, Ohio.*

Rubber Floor, Wall Tile

Stylized Floors-Walls of Rubber. Shows 28 colors and variety of designs in *Flexi-Flor and Wall-Flex* — rubber wall and floor coverings. 4 pp., illus. The R.C.A. Rubber Co., Akron, Ohio.

Hot Water, Radiant Heating Controls

Sarcotherm Weather Control (Technical Bulletin No. 2). Covers centralized panel program control systems for hot water and radiant heating in apartment houses, offices, schools, etc. Schematic diagrams of boiler hookups and wiring diagrams are included along with specifications. Sarcotherm Controls, Inc., Empire State Bldg., New York 1, N. Y.

Air Diffusers

Type HU Anemostat Air Diffusers for Projection Unit Heaters (Bulletin 28). Explains operation and application of the Type HU air diffuser. Shows how it is used on vertical-discharge unit heaters for installation from 10 to 30 ft. above the floor. Also covered is the Type HU-4 for installations 8 to 16 ft. above the floor to provide a broad downward air pattern. Dimensional data are listed. 4 pp., illus. Anemostat Corp. of America, 10 E. 39th St., New York, N. Y.*

Hollow Steel Doors, Frames

U.S.F. Hollow Steel Doors and Frames. Features door applications typical of six multiple dwelling projects for which U.S.F. doors have been selected recently. Complete technical data are included covering types of doors available, door and frame sizes, fire test data, etc. 4 pp., illus. United Steel Fabricators, Inc., Wooster, Ohio.

Explosion-Proof Hospital Equipment

Appleton Hospital Equipment. Pictures and describes explosion-proof X-ray film illuminators, dead-end receptacles and plugs, sealed switches, pilot lights, grounding units and electric clock. Specifications are included. 8 pp., illus. Appleton Electric Co., 1701-59 Wellington Ave., Chicago 13, Ill.

Tie-Wire

Monel Tie-Wire. Outlines advantages, range of use, and installation of Monel Tie-Wire. Installation drawings and specifications are given for its use with suspended ceilings, partitions, floors and walls and as brick anchors, concrete anchors and tile roof anchors. Various characteristics of the wire are listed. 8 pp., illus. The International Nickel Co., Inc., 67 Wall St., New York 5, N. Y.

Non-Skid Coating

Keep Floors Safe With Tread-Sure. Folder on an abrasive-filled plastic brush coating developed to produce an anti-skid surface on wood, concrete or steel deck. Describes properties, lists available colors and directions for application. Illustrates typical uses. 4 pp., illus. A. C. Horn Co., Inc., 10th St. & 44th Ave., Long Island City 1, N. Y.*

Food Freezing Equipment

The Ultimate in Quick-Freezing Equipment (Bulletin No. 148-D). Describes operation and illustrates various types of tunnel freezers for handling all foods. A labeled diagram shows all the components of the tunnel freezer for both conveyors and push trucks. 4 pp., illus. Frick Co., Waynesboro, Pa.

Awning Windows

Lemco Series 62 Extruded Aluminum Windows — Awning Type. Folder lists standard types and sizes, architects' specifications and shows full-size sections of aluminum awning-type windows. Installation details are also included, as well as details of the operating mechanism. 6 pp., illus. Croft Steel Products, Inc., Jamestown, N. Y.*

Wood Applications and Properties

(1) Idaho White Pine, Its Properties, Uses and Grades; (2) Enchanting Homes of Western Pines. The first book is one of a series on wood species grown and manufactured in the Western Pine Region. It reviews the properties, characteristics, applications and grades. Full page photographs show typical pieces of each grade.

The second pictures actual paneling and interior woodwork of the three

(*Continued on page 200*)

* Other product information in Sweet's File, 1949

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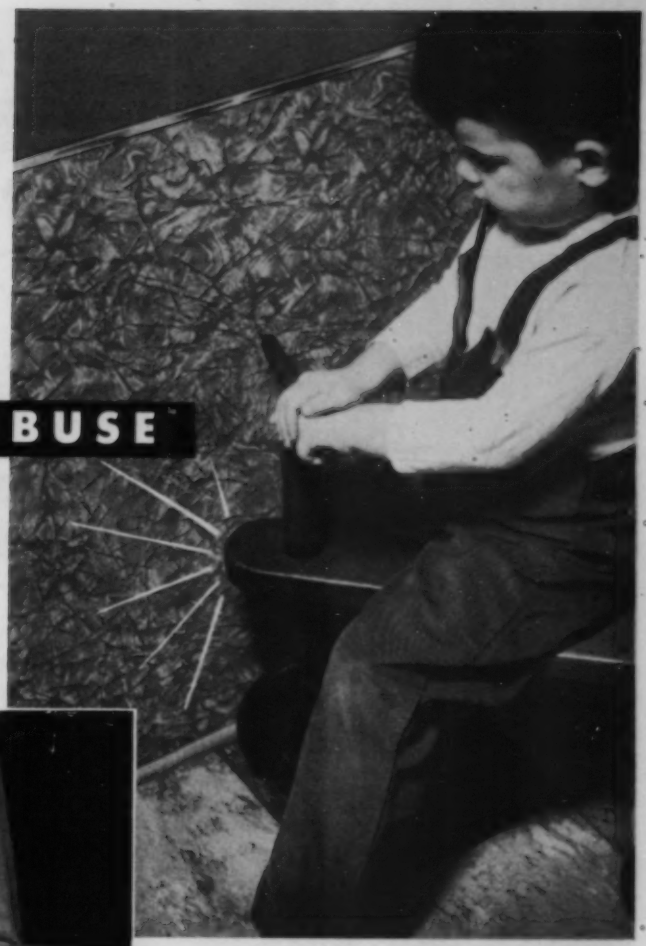
STAND UP TO ABUSE



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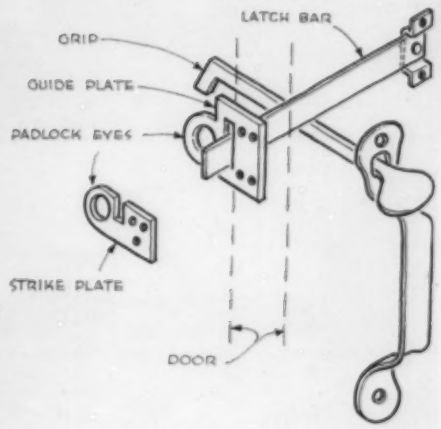
HARDWARE—2: Types of Locks and Latches

(*Continued from page 146*)

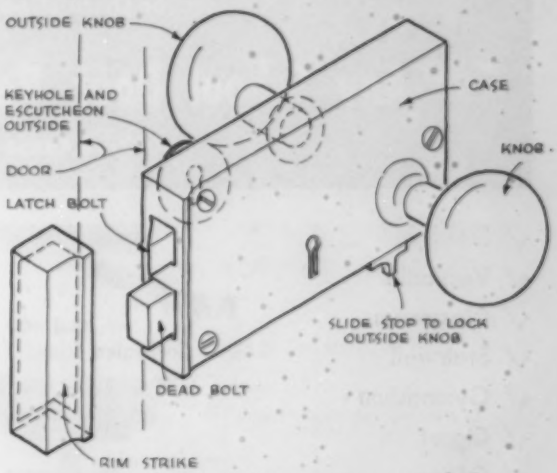
THUMB LATCH

Oldest type; simple to install; difficult to adjust; may be padlocked. Made generally. Often used instead of outside knob for period front doors.



RIM LOCKS & LATCHES

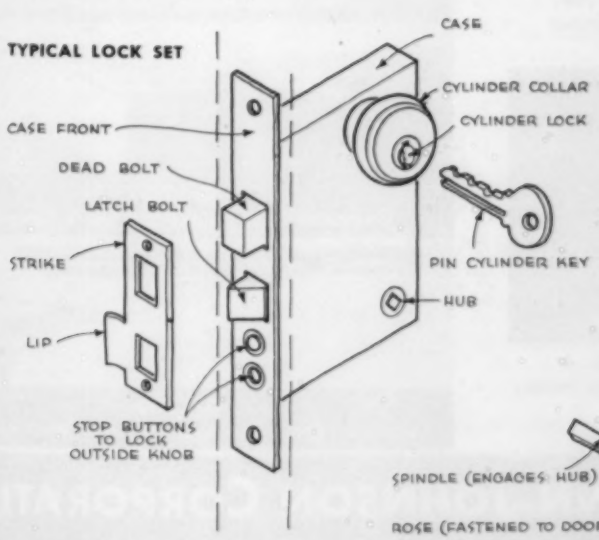
Case and strike both mounted on face of door and trim without mortising; colonial design.

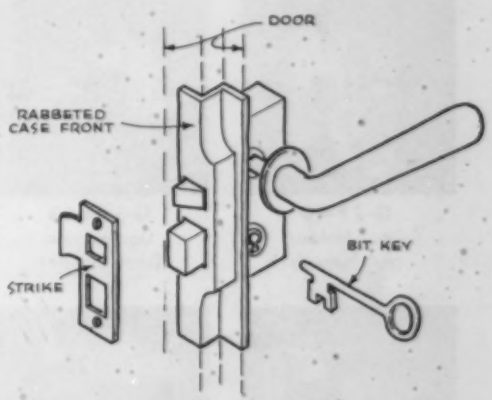


OTHER TYPES, SUCH AS RIM NIGHT LATCHES, OFTEN USED IN REMODELING WORK.

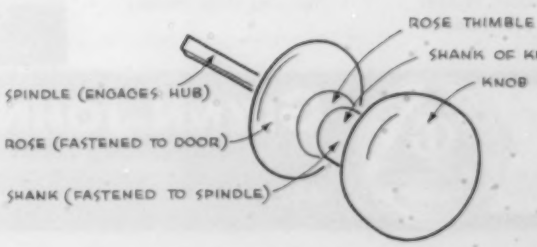
MORTISE LOCKS & LATCHES

Developed historically from rim types; large mortise makes for lengthy installation in wood doors; hollow metal doors easily fabricated to template to receive case, cylinder and spindle. Size of case and accessibility of mechanism make economically possible the maximum number and variety of key and latch functions. Made generally.





TYPICAL LOCK SET WITH RABBETED FRONT & LEVER HANDLE FOR DOUBLE, NARROW STILE DOORS



TYPICAL KNOB

(*Continued on page 153*)

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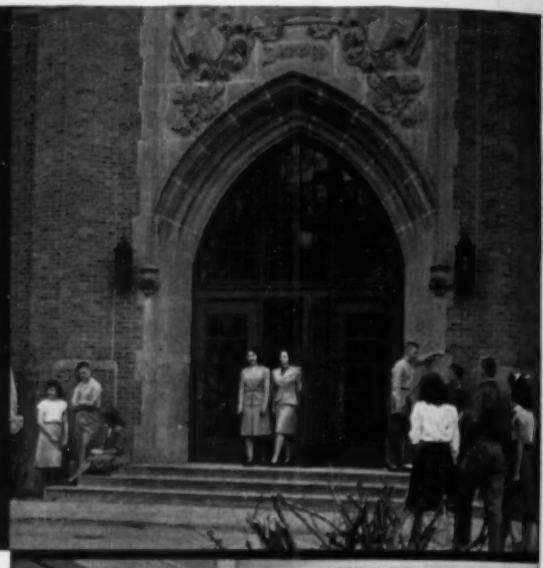
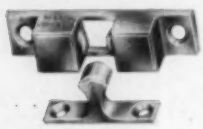
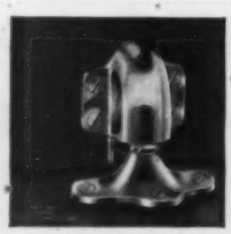


- √ Entrance
- √ Vestibule
- √ Classroom
- √ Stairwell
- √ Gymnasium
- √ Closet
- √ Office
- √ Transoms

G-J 400
Concealed Transom Adjuster



G-J 21A
4-Way Catch

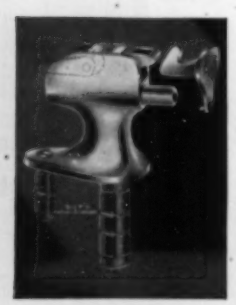


G-J F-40
Door Holder
and Bumper

G-J FB-13
Dome Type
Door Bumper

G-J WB-5
Wall Type
Flush Bumper

G-J F-20
Door Holder
and Bumper



G-J F-9
Door Holder
and Bumper

G-J No. 4
Hercules Door Holder

G-J 100
Concealed Overhead Door Holder

G-J 90
Surface Type Overhead Door Holder

G-J 80
Overhead Door Holder and Shock Absorber

G-J 70
Overhead Door Holder and Shock Absorber

G-J 500
Concealed Overhead Door Stay and Shock Absorber

For detailed description and applications of these devices, refer to our general catalog.

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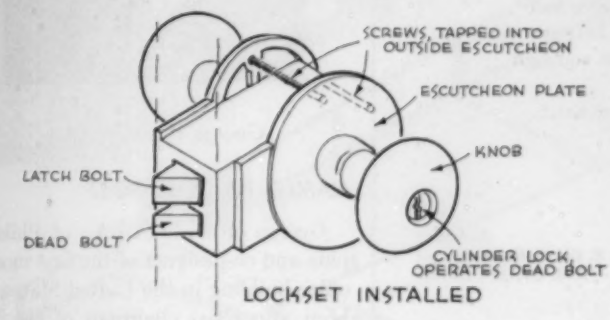
HARDWARE—3: Types of Locks and Latches

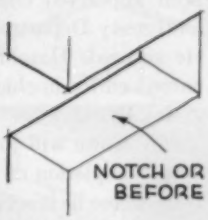
(*Continued from page 151*)

UNIT LOCKS

Complete factory assembly eliminates much adjustment on job. Unit slid into notch cut on job (wood) or prepared at shop (metal doors). Dead bolt may be omitted to make simple latch set to match. Lock-set also made without dead bolt but with button in inside knob to prevent outside knob from turning (for bathroom, bedroom, etc.); made by relatively few manufacturers.



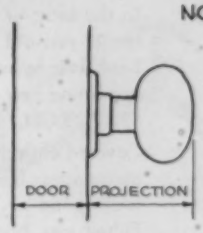
LOCKSET INSTALLED



NOTCH OR CUT-OUT IN DOOR BEFORE INSTALLATION

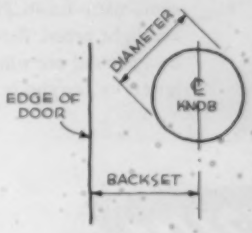
BACKSETS & PROJECTIONS

NORMAL KNOBS



KNOB PROJECTION USUALLY 2⅛" TO 2½"

KNOB DIAMETER USUALLY 1¾" TO 2¼"

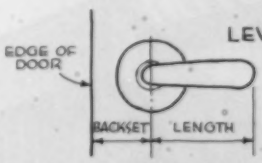


BACKSETS NORMALLY BETWEEN 2⅜" AND 2¾"

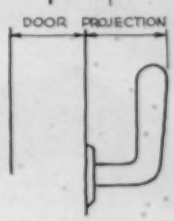
NARROW BACKSETS AVAILABLE AS SHORT AS 1" FOR NARROW STILE DOORS, FRENCH DOORS, ETC. LEVER HANDLES USUAL WITH THESE

EXTRA LONG BACKSETS (5", 7", 10" AND UP TO HALF WIDTH OF DOOR) AVAILABLE FOR CYLINDRICAL LOCK SETS.

LEVER HANDLES



LENGTH OF HANDLE VARIES FROM 2" TO 4"

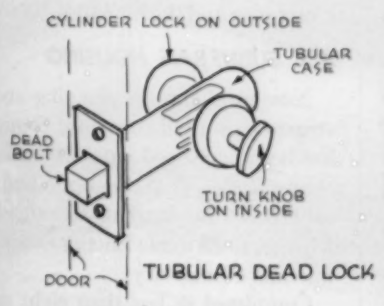


PROJECTION OF LEVER HANDLES VARIES FROM 1⅛" TO 3" OR MORE (2" ± MOST USUAL)

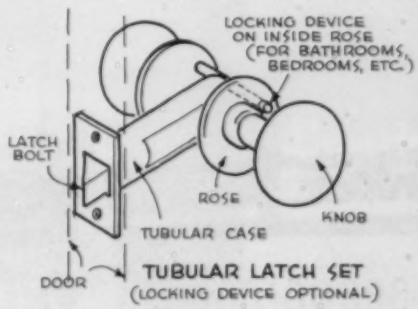
NOTE – LEVER HANDLES REQUIRE AUXILIARY SPRING IN MECHANISM TO RETURN HANDLE TO HORIZONTAL POSITION

BORE-IN LOCKS & LATCHES (TUBULAR & CYLINDRICAL TYPES)

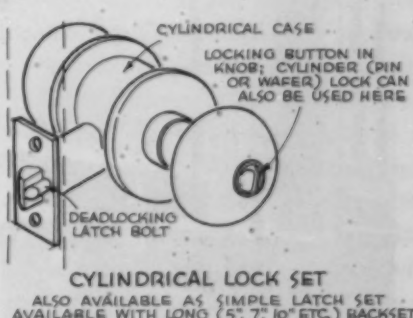
Simple to install in wood doors; only two holes to bore and shallow mortise for case front; metal doors also can be easily fabricated to receive these types.



TUBULAR DEAD LOCK



TUBULAR LATCH SET
(LOCKING DEVICE OPTIONAL)



CYLINDRICAL LOCK SET

ALSO AVAILABLE AS SIMPLE LATCH SET AVAILABLE WITH LONG (5", 7", 10" ETC.) BACKSET

SEPARATE TUBULAR LOCK SETS AND LATCH SETS MADE BY MANY MANUFACTURERS.

METHOD OF BORING HOLES

THIS TYPE MADE TO BATE ONLY BY A FEW MANUFACTURERS.

METHOD OF BORING HOLES

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*Reg. U.S. Pat. Off.

THE RECORD REPORTS

(*Continued from page 22*)

the new highway are planned to provide easy access to the Embankment.

Acme Photo

George Howe, F.A.I.A.

NAMED TO YALE POST

George Howe, F.A.I.A., of Philadelphia and co-designer of the first modern office building in the United States, has been appointed chairman of the Yale University Department of Architecture. He succeeds Harold D. Hauf, recently named editor-in-chief of the ARCHITECTURAL RECORD.

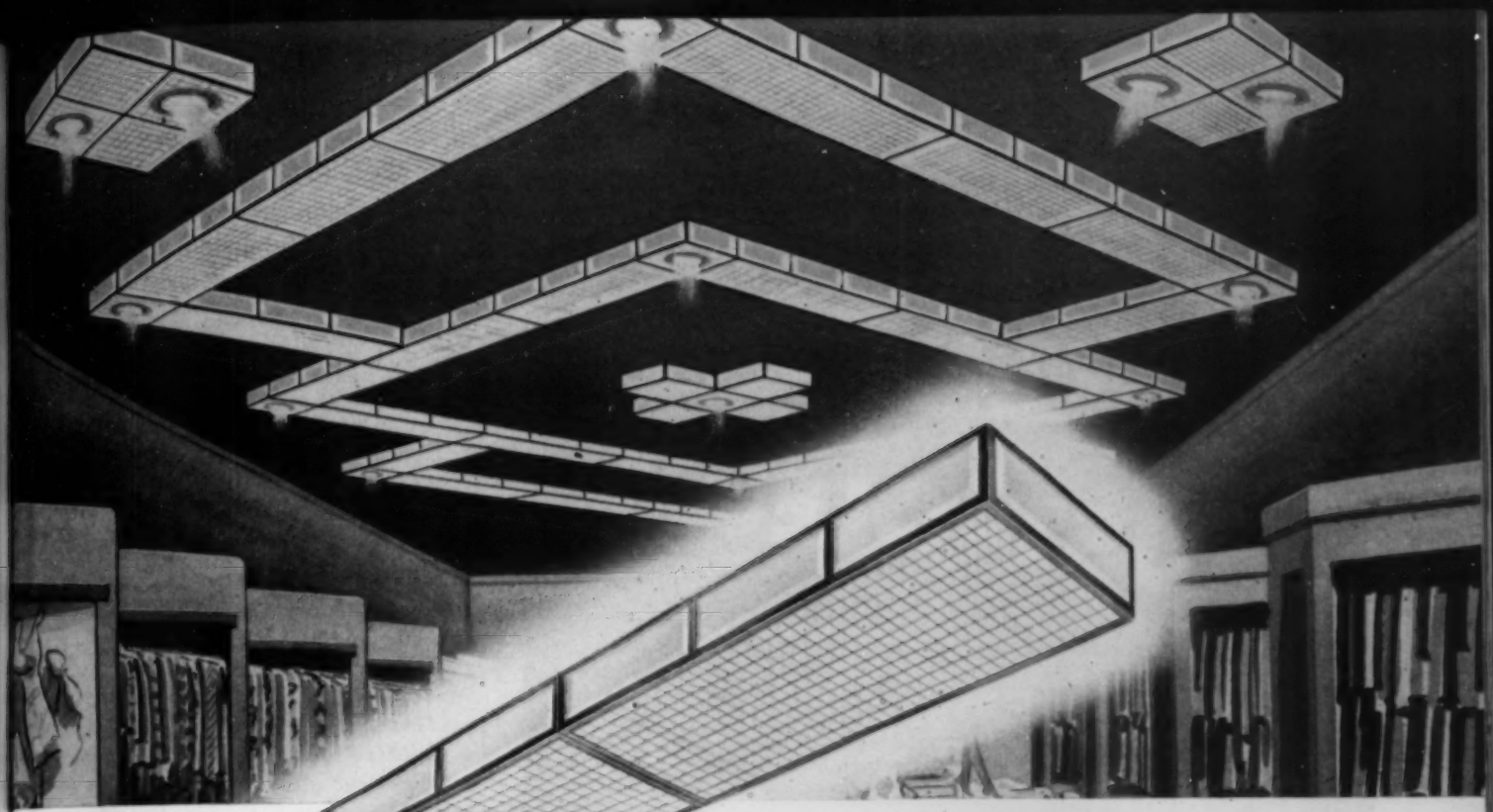
Mr. Howe will join the Yale faculty upon completion of his present work in Italy where he is serving as architectural adviser to the American Academy in Rome and as architect to the American Consulate in Naples. In 1932 with William Lescaze, he designed the 33-story Philadelphia Savings Fund Society building, first air conditioned modern office building. Mr. Howe is also well known for his work with the Public Buildings Administration during the war and with low-cost and wartime housing projects. He is a graduate of Harvard University and the École des Beaux Arts.

AEC SUBURBAN HOUSING

New procedure in planning and construction of a self-contained community has been developed with the building of White Rock, N. M., first of a number of suburbs to be constructed outside Los Alamos, the Atomic Energy Commission wartime atomic city.

Completed in less than eight months after breaking of ground and costing less than half the unit cost of any known housing project built by government or private industry in the semi-permanent type field and under like conditions, the project is a community of real homes, dormitories, trailer areas and contains a

(*Continued on page 156*)



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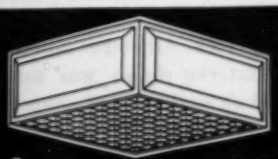
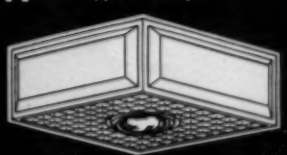
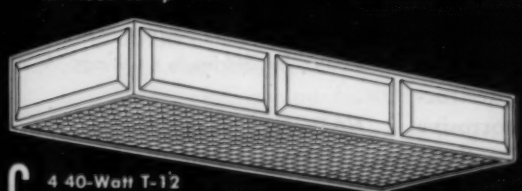


A 4 14-Watt T-12 15" Type F Lamps

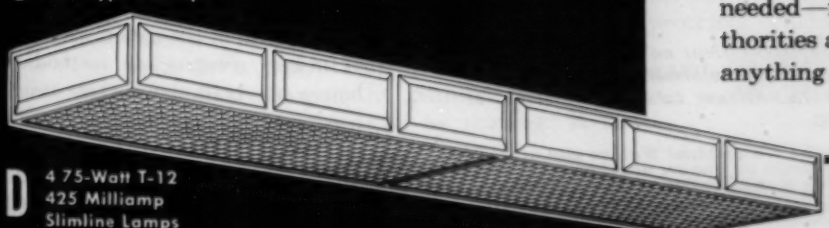


B 1 32-Watt 12" Circline Lamp, & 1 PAR Spot or Flood Lamp

these 4 modules are the "building blocks" of the Mitchell Module Lighting System



C 4 40-Watt T-12 48" Type F Lamps



D 4 75-Watt T-12 425 Milliamp Slimline Lamps

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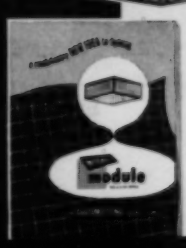

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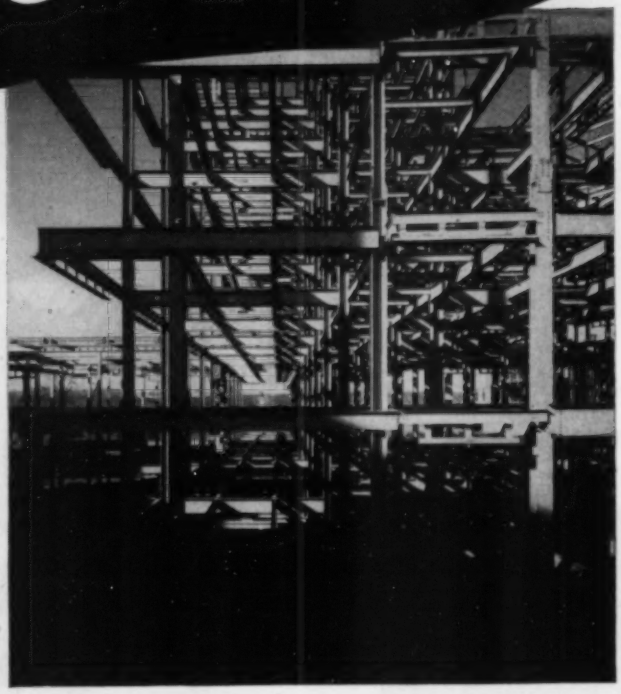

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For structural protection, specify the use of Rust-Oleum on all iron and steel — particularly in inaccessible areas where condensation causes rust. Rust-Oleum positively stops rust and adds years of life to structural members, pipes, sheet metal, etc. which are difficult or impossible to reach in normal maintenance.

Indoors or out — Rust-Oleum seals metal with a tough, pliable, destruction-proof coating. Originally developed to resist the highly corrosive effects of salt water and salt air, under tough sea-faring conditions, Rust-Oleum gives lasting protection where ordinary materials fail. It's *your* best answer to all rust problems.

We will gladly offer specific recommendations on Rust-Oleum application and uses, if you will give us full information as to technical requirements. See the complete Rust-Oleum catalog in Sweet's, or write for a copy.

PERSONAL — Do you have a rust problem? We'll be glad to send a free sample for a test application on your car or at home. Be sure to state color preference. There is no obligation, of course.

Rust-Oleum is available through industrial distributors in most principal cities

RUST-OLEUM CORPORATION

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THE RECORD REPORTS

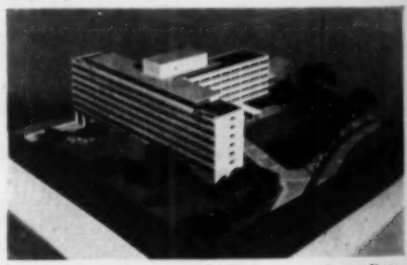
(*Continued from page 154*)

church, school, police and fire station, post office and all stores needed to supply goods and services for a city of 5000 population.

A complete operating procedure was planned in advance by the New Mexico Housing Co., of Santa Fe, which served as architects and engineers. Walter W. Cook & Associates, architects and engineers, of Dallas, and Carter and Burgess, engineers, of Fort Worth, served as associates on the project.

With $4 million available for the construction the bids received were enough less than that to provide addition of 40 more houses, several more buildings in the service center and, with the amount left over, to bring water and electricity to White Rock from Los Alamos. Cost comparisons revealed that the project was constructed at a unit cost of $1010 per occupant or $2080 per worker housed.

All residential units contain pre-cut and panelized floors, walls (including both exterior and partitions), ceilings, roofs and gables. Interior finish was plywood in all but staff houses which contained sheet rock. All houses had double flooring. Exterior finish was asbestos shingle and all roofs were of composition shingle.



Fennar Photo

New voluntary hospital at Greenwich, Conn. By Skidmore, Owings & Merrill

NATIONAL HOME WEEK

National Home Week, sponsored by the National Assn. of Home Builders, was celebrated Sept. 11–17 in communities throughout the nation with displays of newest construction methods, how homes are built, how whole neighborhoods are developed and what the newest homes contain in furnishings and decoration. Apartment projects as well as individual houses were displayed. In Chicago, 90 new homes, completely furnished, went on display. In Pittsburgh a show was put on by the use of an

(*Continued on page 158*)

Floor of Northern Hard Maple, 80 x 100 feet, a dual-purpose innovation which combines gymnasium and roller-skating rink, at Archbishop Stepinac High School, White Plains, N. Y.—an interesting development in supervised recreation. Eggers & Higgins, Architects, New York, N. Y.

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in the bright beauty, endurance and economy of

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MFMA records prove that true economy and thorough satisfaction are assured by a well-laid, properly-finished floor of Northern Hard Maple. *It reflects good judgment*. Northern Hard Maple is close-grained, tough, strong, rigid. It is truly resilient. It is amazingly resistant to denting by pointed impact or pressure, and to abrasion by scuffing. It is non-splintering. It is readily stained to many varied tones, and it is brightly beautiful without any stain.

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For full data, see Sweet's, Arch., 13/g/6—Eng., 4/5/22. Write for latest listing of **MFMA**-approved finishing products and processes. Address—

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★

THE RECORD REPORTS

(*Continued from page 156*)

outdoor exposition area for displays in county fair manner. San Franciscans combined their event with "garden week" for a colorful combination.

HOBART BROWN UPJOHN

Hobart Brown Upjohn, Architect, died Aug. 23 in Scarsdale, N. Y. He was 73.

Mr. Upjohn was a graduate of Stevens Institute of Technology and the Polytechnic Institute of Brooklyn. He was head of a firm founded at New Bedford, Mass. in 1833 by his grandfather, Richard Upjohn, who designed Trinity Church in New York in 1839. Himself noted for his church work, Mr. Hobart Upjohn in 1935 supervised the restoration of the Trinity Church tower and in 1932 drew the plans for All Souls Unitarian Church in New York City. Mr. Upjohn was awarded the diploma of merit at the International Exposition at Turin, Italy, for the Village Chapel at Pinehurst, N. C., the Chapel of the Cross at Chapel Hill, and the library at North Carolina State College.

ON THE CALENDAR

Through Oct. 10: 3rd Annual Chicagoland Home and Home Furnishing Festival, Chicago, Ill.

Through Nov. 20: "For Modern Living," exhibition of contemporary design in home furnishings and objects, Detroit Institute of Arts, Detroit, Mich.

Through Dec. 4: 20th Anniversary Exhibition: Modern Art in the Modern World, Museum of Modern Art, New York City.

Oct. 10–14: First Pacific Area National Meeting, American Society for Testing Materials, Hotel Fairmont, San Francisco.

Oct. 17–21: Midwest General Meeting, American Institute of Electrical Engineers, Netherland Plaza Hotel, Cincinnati, Ohio.

Oct. 17–21: 31st National Metal Congress and Exposition, American Society for Metals, Cleveland, Ohio.

Oct. 20–22: Convention of the New York State Assn. of Architects, Rochester, N. Y.

Oct. 24–28: 37th National Safety Congress and Exposition, featuring

(*Continued on page 160*)

A COOL $20,000,000

Glenn McCarthy's fabulous hotel, "The Shamrock"—new $20,000,000 Aladdin's palace in Houston—has given rise to hundreds of exciting stories.

Especially exciting are the 18 completely air conditioned stories that make this wonderful new hotel a miracle of comfort from lobby to penthouse.

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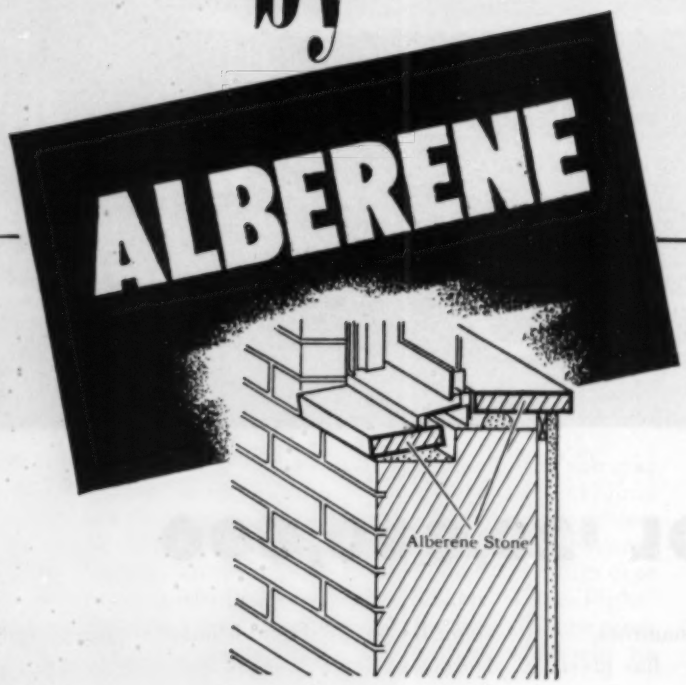

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THE RECORD REPORTS

(*Continued from page 158*)

home safety sessions, Morrison Hotel, Chicago, Ill.

Oct. 24–29: Second Annual Fall Market, National Assn. of Summer Furniture Manufacturers, Chicago, Ill.

Nov. 2–4: Fall Meeting, American Society of Civil Engineers, Washington, D. C.

Nov. 4–13: 24th Arizona Art Exhibition, Arizona State Fair, Phoenix, Ariz.

Nov. 13–16: 16th Annual Meeting, National Assn. of Housing Officials, Copley Plaza Hotel, Boston, Mass.

Dec. 4–10: 7th Panamerican Congress of Architects, including an Industrial and Commercial Exposition of architectural construction materials and methods, Havana, Cuba.

Mexico City's first 40-story building. By La Latino-Americana, Cia. de Seguros Sobre La Vida, S.A., engineering staff

BUILDING NOTES

Aluminum Office Building

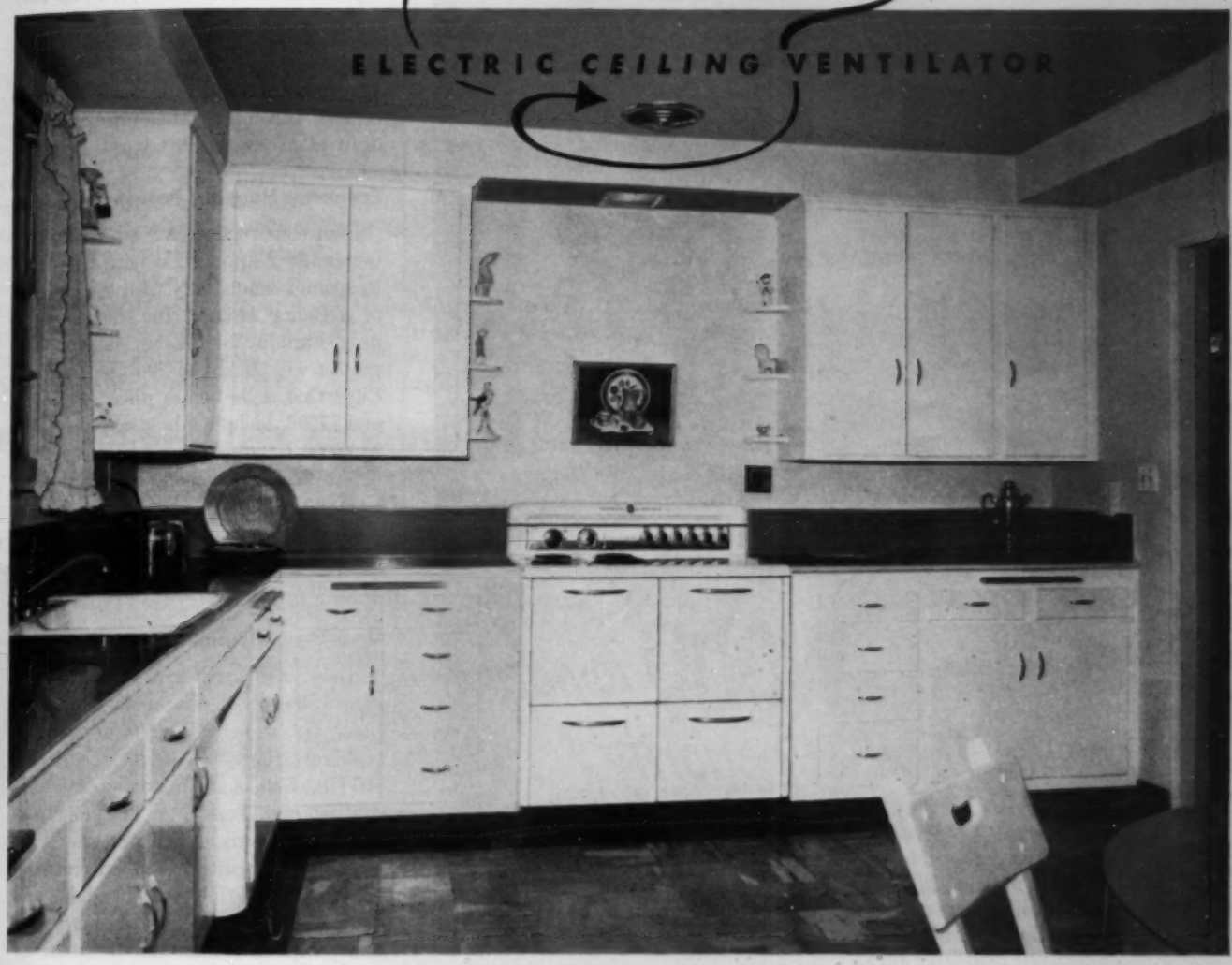
Completion of a thin-walled aluminum administration building at Alcoa's 52-acre sheet and plate rolling mill on the banks of the Mississippi above Davenport has been announced. This departure from traditional office building design and erection provides Alcoa with a four-and-a-half-story building consisting of hundreds of cast aluminum panels, fastened to the structural steel building frame and backed with light weight concrete insulating slabs only 4 in. thick.

So designed and constructed that it can readily be adapted to multiple story building construction in metropolitan areas, the structure has materially increased usable floor space within the building and may become the prototype of Alcoa's proposed 30-story skyscraper in Pittsburgh, scheduled to go under con-

(*Continued on page 162*)

Blo-Fan*

ELECTRIC CEILING VENTILATOR



Tops in Appearance ★ Tops in Performance

Blo-Fan* installs conveniently at the highest point over the range, where a fan belongs—where it blends into the room without interfering with the overall design—where it harmonizes with modern kitchen appointments and appliances.

Blo-Fan combines the best principles of both a fan and blower. The propeller element feeds air to the blower element, supercharging the vortex of the blower so the vanes are fully loaded for peak performance. That's why Blo-Fan delivers more air at moderate speeds than either a blower or a propeller-type ventilator.

*Trade Mark Reg.

SPOT VENTILATION AT THE POINT OF AIR POLLUTION
FOR KITCHEN...BATH...GAME ROOM...AND LAUNDRY

ALSO MANUFACTURERS OF *Pry-Lites ... the modern recessed lighting fixtures with snap-on fronts*

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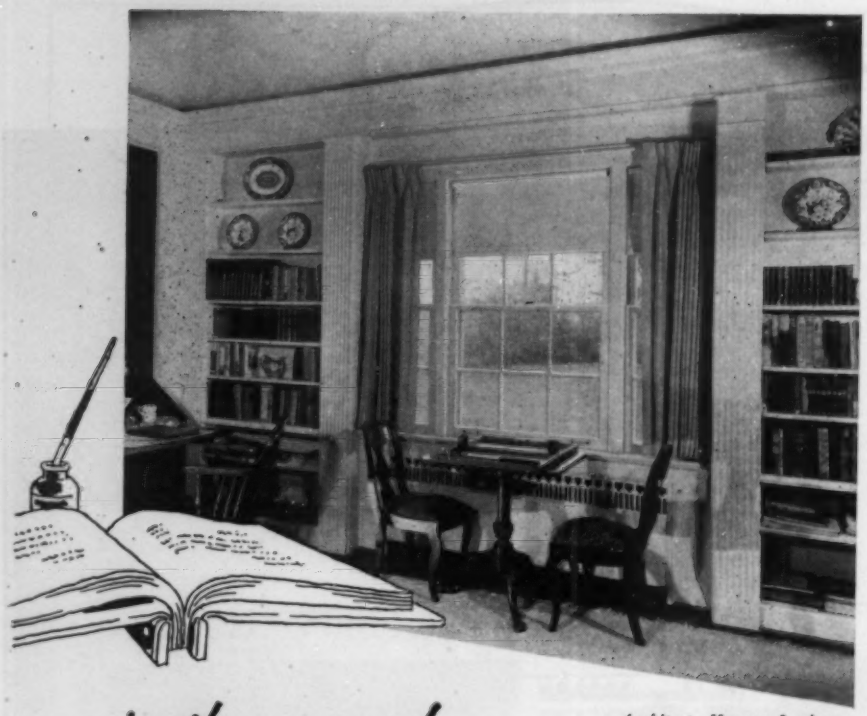

Architect—Herman Lackner
Winnetka, Ill.

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EXPERIENCE—owner-experience in thousands of houses—has proved wood an ideal material for windows. For wood, with its natural insulating qualities, keeps rooms more comfortable by retarding the passage of heat and cold. Wood discourages condensation and frosting... wood provides an excellent bonding surface for all finishes... lastingly holds any decorative treatment.

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THE RECORD REPORTS

(*Continued from page 160*)

struction in mid-1950. Harrison & Abramovitz, Architects, were designers of the Davenport structure and will draw plans for the Pittsburgh building.

Economy Housing Program

First construction in New York State under the National Economy Housing Program is under way with the erection of a Bailey Homes, Inc. development near Farmingdale, Long Island. The project will consist of 200 two-bedroom Cape Cod style homes priced at $6990 and $7290, including landscaped lot 100 by 60 ft., or larger, oversize kitchen with dinette space, range, oil-powered radiant heat, 4 closets and ceramic tile bathroom. Monthly carrying charges on the house, which is FHA approved, will be $49.50 for 25 years.

New Gymnasium

Kelly & Gruzen, architects and engineers, have been commissioned to draw plans for a new modern gymnasium building adjacent to the Power Memorial High School at Amsterdam Ave. and 61st St., New York City. The new structure, which is to be built for the Christian Brother Institute, Inc., will contain, in addition to the usual handball and basketball courts, lockers, shower rooms and complete gymnasium facilities, an arena accommodating 2000 spectators.

University-Developed House

A house costing around $5000 has been developed by the Engineering Experiment Station of Louisiana State University. Providing two bedrooms, the house is of concrete and concrete masonry construction and contains walls of 6 in., lightweight, steam pressure-cured concrete blocks, painted outside with two coats of water repellent paint and inside with one coat of primer and one of oil. Sink cabinet and cabinets over sink are metal. Roof is of trussed rafter design and house rests on concrete footings and 4 in. concrete slab floor.

Low Cost Industry Houses

Five-room, industry engineered homes are being sold to veterans for prices as low as $6000, including land and utilities, James M. Ashley, president of the Producers' Council, has announced.

Having a floor area of 788 sq. ft., these

(*Continued on page 164*)

Here's Why It Pays To Specify

Pittsburgh Steeltex Lath For Plaster

You get low maintenance and high fire protection in your buildings with Pittsburgh Steeltex Lath for Plaster. This combination of galvanized welded wire mesh and absorbent backing makes possible positive embedment of the wire mesh and provides maximum *reinforcement* and protection against plaster cracks. Also this reinforcement has earned high fire ratings for Steeltex including Underwriters' Laboratories, Inc. test R-2258.

In addition Steeltex provides a rigid troweling surface which speeds its application and saves plaster. For better plaster construction see our catalog in Sweet's or write for Catalog D.S. 130 to Dept. AR, Pittsburgh Steel Products Company, Grant Building, Pittsburgh 30, Pennsylvania.

PITTSBURGH STEEL PRODUCTS COMPANY

A Subsidiary of Pittsburgh Steel Company

Pittsburgh, Pa.

THERE'S 27 YEARS OF PROOF BEHIND THIS FLOOR!

The architect of this building wasn't taking chances. He specified the floor of proved performance . . .

WRIGHT RUBBER TILE

When you specify Wright you specify all this:

Proved long life. Many WRIGHT RUBBER TILE floors, in heavy traffic service for 27 years, still look as good as new. When measured for wear, they show a potential life of over 100 years.

Proved low maintenance. Hundreds of large commercial users testify that WRIGHT RUBBER TILE has cut their cleaning costs by more than half — saving them the total cost of their floor in less than two years.

Proved foot comfort. Twenty-seven years of experience by thousands of users has proved beyond doubt that resilient WRIGHT RUBBER TILE drastically reduces foot fatigue.

Proved over-all economy. Long life and low maintenance combine to make WRIGHT RUBBER TILE the most economical floor covering you can possibly specify.

Proved user satisfaction. In 27 years, Wright has built an unmatched list of enthusiastic users. When you write for samples, be sure to ask for a list of satisfied users in the application you are considering. WRIGHT MANUFACTURING CO., 5205 Post Oak Road, Houston 5, Texas.

WRIGHT RUBBER TILE
is made in two different types:

WRIGHTEX Soft Rubber Tile for homes, hospitals, churches and other installations where quiet is important.

WRIGHTFLOR Hard Surface Rubber Tile for offices, stores, restaurants and public buildings—wherever traffic is heavy and long wear is most important.

WRIGHT-ON-TOP Compression Cove Base

The ideal finishing touch for every flooring installation, WRIGHT-ON-TOP is available in black and all twenty field tile colors.

WRIGHT RUBBER TILE

FLOORS OF DISTINCTION

THE RECORD REPORTS

(*Continued from page 162*)

homes feature time-saving devices in construction, including the roof truss (which enables much of the inside work to be completed before partitions go into place) and use of modular materials.

AT THE COLLEGES

Special Courses

Two courses in housing and planning are being offered at the New School for Social Research, New York, for the fall term and in the spring Lewis Mumford, author and former professor of humanities at Stanford University, will deliver six lectures on "Goals for Urban Development."

Columbia University is offering evening courses in housing, planning and real estate for both the fall and spring semesters.

Faculty Appointments

Alfred Roth, of Zurich, will join the faculty of the Washington University at St. Louis, School of Architecture as critic in senior design.

H. T. Wijdeveld, Dutch architect and teacher, has been appointed visiting professor of architecture in the School of Design at North Carolina State College. He relinquishes a position as professor in the College of Architecture at the University of Southern California to accept the State College job.

Walter Sanders, of Sanders & Malsin, Architects, New York City, has been appointed professor of architecture at the University of Michigan. He will establish a branch office of the firm at Ann Arbor. The New York office of the firm will continue operations under the direction of Arthur Malson and Don Reiman, recently made an associate of the firm.

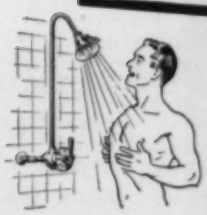
CONCRETE INSTITUTE AWARD

Charles S. Whitney, representing the firm of Ammann & Whitney, consulting engineers of New York and Milwaukee, has received the first annual award of the Concrete Reinforcing Steel Institute for his contribution to the advancement of reinforced concrete construction.

Whitney received the award on behalf of his firm for their paper entitled, "Thin Shell Concrete Structures." The award consisted of a certificate and $500.

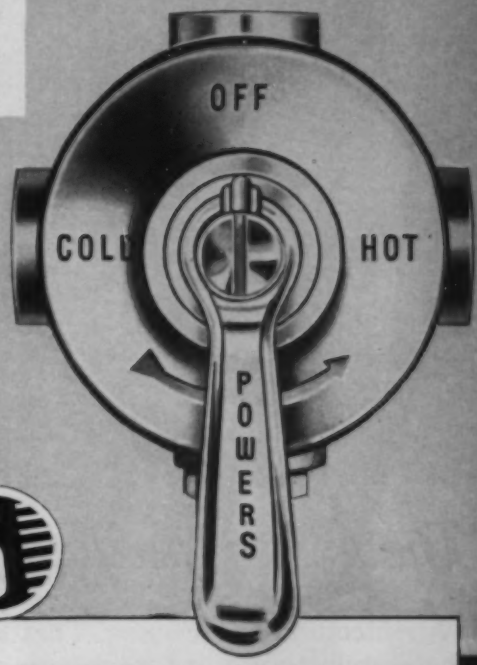
(*Continued on page 166*)

For SAFETY · COMFORT · ECONOMY



Bathers can really relax and enjoy a Powers regulated shower. No danger of scalding. No unexpected temperature changes.

Back in 1923 Powers introduced the first and original pressure equalizing type water mixer. **Now** it offers the SAFEST thermostatic water mixer made.



TYPE H MIXER For exposed piping ½" pipe connections. Capacity: 6 to 10 gals. per min. at 45 lbs. pressure. Dial diam. 3¼". Mixer for Concealed Piping has 6" diam. dial.

ONLY ONE MOVING PART

SIMPLICITY and durable construction insure many years of efficient carefree operation. Mixer body is made of bronze and parts subject to wear have a hard chromium finish.

use

POWERS

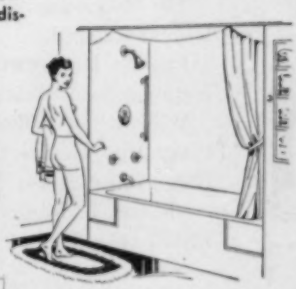
Thermostatic SHOWER MIXERS

they are SAFE against scalding caused by

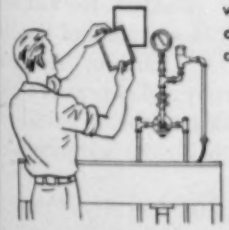
① PRESSURE *or* ② TEMPERATURE

fluctuations in water supply lines

For modern showers the Safety of Powers Mixers is indispensable.



Safest for use by children, the aged or infirm. Powers mixers are widely used in hospitals on hydrotherapeutic and infant baths.



Accurate within ½°F. Powers mixers are used by leading builders of X-Ray and color film developing units.

To assure the safety and comfort required of today's modern showers specify POWERS Type H Mixers.

Being *thermostatic* they give positive two-way protection against scalding or jumpy shower temperatures caused by pressure or temperature changes in water supply lines . . . two dangerous variables in all shower installations.

POWERS mixers are modern, really safe and non-scald. They're economical too. They save time and there is no waste of hot or cold water while waiting for a shower at the right temperature. 48HA

Phone or write our nearest office for Circular H48

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NEW YORK 17, N. Y. 231 East 46th St. Phone ELdorado 5-2050
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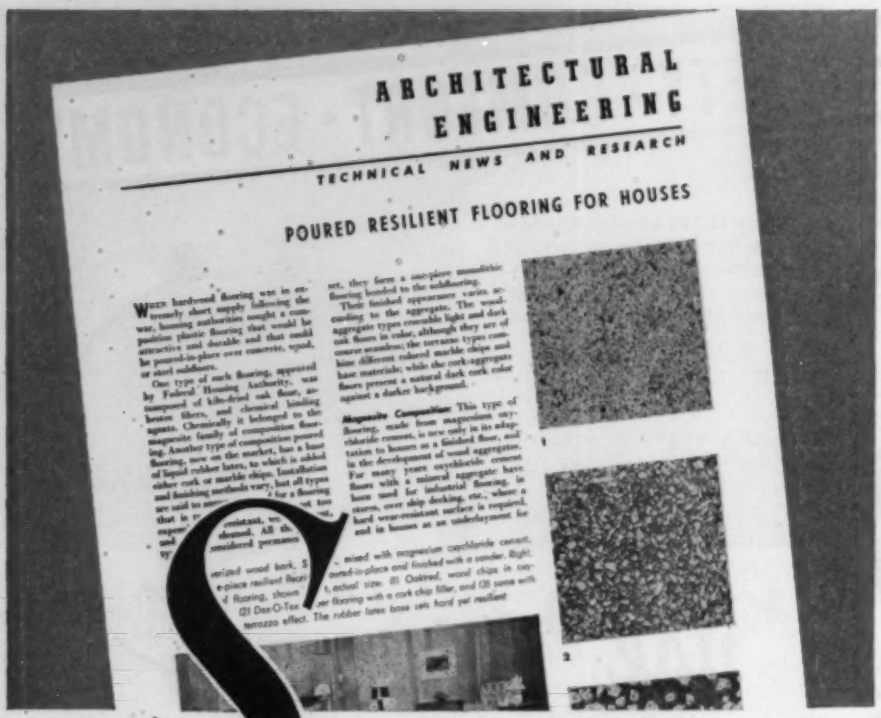
THE POWERS REGULATOR CO.

OFFICES IN 50 CITIES • SEE YOUR PHONE BOOK

*Over **55** Years of Water Temperature Control*


ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

POURED RESILIENT FLOORING FOR HOUSES

The Specifying of your products

is Architectural Engineering. That is the area of building design where architecture and engineering merge, where problems of form and function are resolved in terms of actual building materials, equipment and systems.

Each month the architects and engineers who specify building products find in the *Architectural Engineering* section of Architectural Record a solid package of purely technical information on the close-linked subjects of building *products* and building *design*.

This exclusive editorial feature is one more reason why Architectural Record is *first*, among all architectural publications, in architect circulation, in consulting engineer circulation, in number of advertisers and total pages of advertising carried. Architectural Record is the *workbook of the architect-engineer*.

F.W. DODGE CORPORATION

ARCHITECTURAL RECORD, 119 West 40th Street, New York 18, N.Y.

Please send me the following reports for my file on the building market and architectural advertising:

- ☐ 6-month 1949 analysis of architect-engineer-planned work by dollar volume and numbers and kinds of projects.
- ☐ 6-month 1949 analysis of architectural advertising by product classifications and by publications.
- ☐ Who writes specifications? A survey of architectural offices.
- ☐ 30-month chart of advertising volume in the architectural field.
- ☐ Six regional studies of coverage of planning and specifying activity.
- ☐ How "controlled-paid" circulation is influencing the sale of your product today.
- ☐ A simple summary of architect and engineer circulation, by publications.
- ☐ A report on reader preference studies in the architectural field.
- ☐ Pointers on writing architectural copy — a check list for advertisers.

NAME_____

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STREET_____

CITY_____

(Please clip to your letterhead)

THE RECORD REPORTS

(Continued from page 164)

OFFICE NOTES

Offices Opened, Reopened

Robert J. Bennett, Architect, announces the opening of offices at the Monongahela Bldg., Morgantown, W. Va.

George F. Hellmuth, Associates, Architects, have opened offices at the International Office Bldg., 722 Chestnut St., St. Louis, Mo.

Hollis Johnston, A.I.A., formerly of the offices of Stanton & Johnston, has opened a new office at 603–606 Concord Bldg., Portland 4, Ore.

Annette Yates Maier, Architect, announces the opening of her offices at 35 W. Market St., West Chester, Pa.

Emil J. Szendy, A.I.A., has established offices at 401 Euclid Ave., Cleveland 14, Ohio.

Robert I. Upshur, Architect, has opened an office for the practice of architecture at 608½ Harden St., Columbia, S. C.

Wallace and Clemmons, Architects and Engineers, have opened a new office at 1911 Division St., Nashville, Tenn.

Max J. Wolfram, Architect, has opened an office at 1005 W. Belmont Ave., Chicago, Ill.

New Addresses

The following new addresses have been announced:

Eugene D. Corwin, Architect, First National Bank Bldg., St. Paul 1, Minn.

William H. Elliott, Architect and Consulting Engineer, Old Kent News Bldg., Chestertown. Md.

Morton T. Ironmonger, A.I.A., 1229 E. Las Olas Blvd., Ft. Lauderdale, Fla.

Elections, Appointments

Howard P. Gerlach has been appointed vice president of John W. Harris Associates, Inc., builders. He will be in charge of the Chicago office of the firm.

Lester O. A. Johnson, Architect, James D. Murphy and George S. Fowler have been added to the technical staff of the Chicago Land Clearance Commission

Maurice Mantel, formerly of the Ross Frankel Co., has been named architect of the store design division of Kelly & Gruzen, Architects and Engineers, New York.

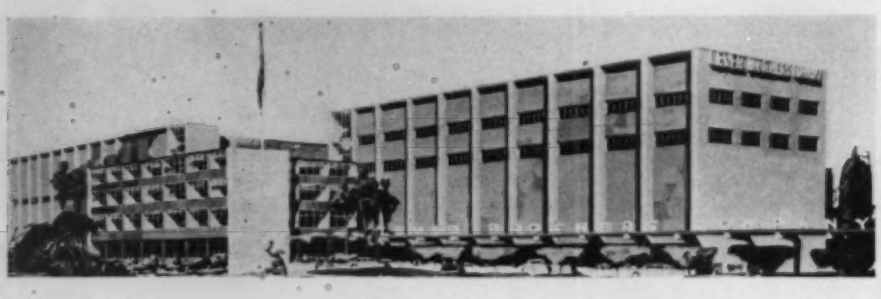
(Continued on page 168)

Sumner Spaulding & John Rex
Architects

DOOR CLOSERS BY *LCN*

CLOSERS CONCEALED IN FLOOR • *SHOWROOM OF LUCIEN LELONG, INC., LOS ANGELES*

LCN CATALOG 11-E ON REQUEST • LCN CLOSERS, INC., 466 WEST SUPERIOR STREET, CHICAGO 10



Lever Bros. processing plant at Los Angeles, Calif., leaves much equipment in the open

Your "Shortest Cut" to the Finest Laboratory ...without wasting a Dollar!

. . .

Send for the New KEWAUNEE BOOK of Hospital Casework & Laboratory Furniture

Includes typical floor plans and elevation drawings

A Few of the Many Kewaunee Installations

St. Mary's Hospital, Rochester, Minn.
Wesley Memorial Hospital, Chicago, Ill.
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Eye, Ear, Nose & Throat Hospital, New Orleans, La.
Mobile Hospital, Mobile, Ala.
Naval Medical Center, Bethesda, Maryland
Veterans Hospital, Fort Hamilton, New York
Greenbrier Hotel, White Sulphur Springs, W. Va.
Mercy Hospital, Jackson, Michigan
Hahnemann Hospital, Philadelphia, Pa.
Flow Memorial Hospital, Denton, Texas
Kings Daughter's Hospital, Staunton, Va.
Marion County Hospital, Columbia, Miss.
Divine Providence Hospital, Williamsport, Pa.
Hospital of St. Raphael, New Haven, Conn.
St. Albans Naval Hospital, St. Albans, New York
Northern Indiana Hospital, Westville, Indiana
St. Joseph's Hospital, Menominee, Mich.
West Tennessee T. B. Hospital, Memphis, Tenn.

See what Kewaunee's method of mass-production and matched-unit assembly plan has to offer you. See how by reducing engineering and installation time we give you true economy without any sacrifice of quality.

For a laboratory of streamlined beauty, time-saving conveniences, and lasting service, equip with—

Kewaunee Casework and Laboratory Furniture

Write for the New Kewaunee Catalog of Hospital Casework and Laboratory Furniture

The services of Kewaunee Laboratory engineers are available to you without cost or obligation.

Kewaunee Mfg. Co.
C. G. Campbell, *President*
5046 S. Center St. Adrian, Michigan

Representatives in Principal Cities

NEW LEVER BROS. PLANT

A new $25 million processing plant, largest of its kind ever to be built in the west, will be constructed on a 30-acre site seven miles east of downtown Los Angeles for Lever Bros. Co.

Facing the Santa Ana Freeway, the new plant will consist of two large manufacturing buildings joined by an office and service unit. One five-story wing will be devoted to soap finishing and packing; the other wing, which is six stories high, will be used for finishing and packing edible products put out by the company.

Designed by Wurdeman & Becket, architects, the plant includes a processing building, a steam generating plant, storage tanks, cooling towers and a hydrogen plant. Much of the processing equipment will be installed completely in the open with only the equipment requiring workers' attention under roof. Two-thirds of the site will be landscaped. The Bechtel Corp. is in charge of engineering and construction.

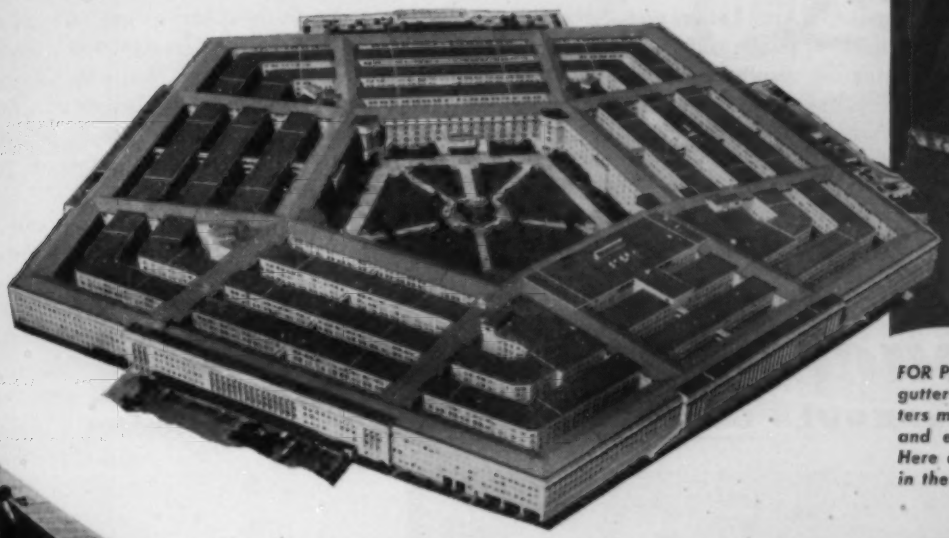
APARTMENT DESIGN COMPETITION

Cash awards amounting to $5000 will be presented to the winners of a competition for the design of a suburban apartment building, sponsored by the Timber Engineering Co., an affiliate of the National Lumber Mfrs. Assn.

Approved by the committee on architectural competitions of the A.I.A., the competition calls for the design of an eight-family wood garden-type apartment building of wood frame construction and plot plan. Family size is to be generally that which would be encountered in a rental project catering to moderate income groups. The building may be up to two stories, but not over and may or may not include a basement, at the designer's discretion. There are no restrictions as to room size, number or shape but the competition is confined to the design of a single basic building, which may be an independent building or part of a larger apartment project.

Eligible for the competition are all architects, designers or draftsmen and students who will graduate from recognized schools of architecture in 1950. Awards will be in major and student categories with a $1500 first prize in the major and a $500 first in the student. Students' designs which equal or exceed the student's design for which it would qualify will receive the major award. Jury of award will consist of George W. Petticord, Jr., A.I.A., John M. Walton, A.I.A., and Edward R. Carr, builder.

Famous Pentagon gets *replacement* gutters...



FOR PERMANENT PROTECTION, the old gutters have been replaced with gutters made of strong, corrosion-resistant and economical Monel Roofing Sheet. Here a worker solders a riveted seam in the gutter lining.

...and this time they're MONEL!

INSTALLING A RIVETED AND SOLDERED section of Monel Roofing Sheet in the built-in gutter of the Pentagon's outer perimeter. Fabricator, Rupertus Sheet Metal Works, Washington, D. C., reports: "Some of the gutters were 55 inches in girth, but Monel was easy to fabricate and install."

* * *

There were two reasons why it was decided to put new gutters on the Pentagon Building.

Repairs to the existing gutters would have been costly. And – more important – repairs would have provided only temporary relief.

Replacement was the only *permanent* solution.

So replacement it was. And this time the gutters were fabricated of Monel* Roofing Sheet.

Advantages of Monel

With its low expansion rate, its high strength and toughness, its resistance to fatigue and corrosion, Monel Roofing Sheet assures "life-of-the-building" protection for the Pentagon. The new gutters are safe from damage by heat, cold, rain, snow, ice and airborne corrosives.

Use light-gauge sheet

Cost-wise, too, there were advantages in using easy-to-form Monel Roofing Sheet on the Pentagon Building. Because of this nickel-copper alloy's greater strength and rigidity, it was possible to use a lighter-gauge sheet for the gutters.

As a result, material cost and installation cost were both reduced.

Get NEW architects' bulletin

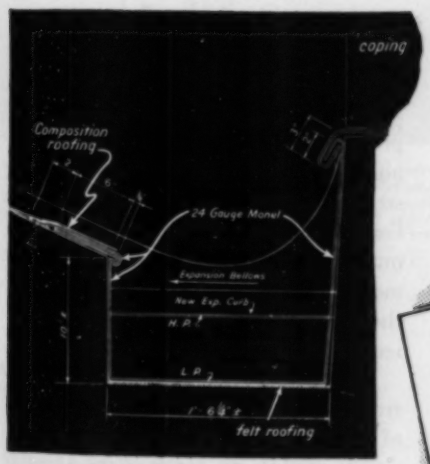
Other benefits, too, go hand in hand with the use of Monel Roofing Sheet. You'll find them covered in our brand new bulletin, *Basic Application Data – Monel Roofing Sheet.*

This new publication lists suggested gauges of Monel Roofing Sheet for principal building applications, reviews its characteristics, and tells about its relative cost and availability. Installation procedures are discussed and a sample specification wording provided.

Send for your copy – *now.*

*Reg. U.S. Pat. Off.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y.



DETAIL OF SECTION of built-in gutter showing how Monel Roofing Sheet was used.

MONEL...FOR THE LIFE OF YOUR BUILDING

Architectural Section
The International Nickel Company, Inc.
67 Wall Street, New York 5, N. Y.

I'd like to know more about durable, economical Monel Roofing Sheet. Please send me without obligation your new folder, *Basic Application Data—Monel Roofing Sheet.*

NAME.....

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CITY.....ZONE.....STATE.....

AR-...-49

 (*Continued from page 10*)

They will undoubtedly be convinced that the average architect is less a Howard Roark than a human being possessing creative talent and practical sense, plus ability to organize and supervise a building program.

Culture—Hot House Style

Culture, like economics, has its planners. Possibility that recommendations to be made by the Dominion Government's newly constituted Royal Commission on National Development in the Arts, Letters and Sciences, may open the public coffers for worthy purposes has resulted in a plethora of briefs.

The latest comes from the National Federation of Canadian Artists, Vancouver, and proposes that Parliament establish a national cultural board. Art is not a luxury, the brief states, and cultivation of the arts "is an essential prerequisite to the development of a stable national culture."

A stable national culture is evidently highly desirable, since the Dominion Government is urged to get us one. Of course, in doing so the arts must not be "dominated, regimented or exploited to narrow ends." Such an admonition often means that, if taxpayers' money *is* forthcoming, there should be as few strings as possible attached to its spending.

Specifically, the Federation calls upon the Dominion Government to expand its Canadian Broadcasting Corporation, National Film Board and National Gallery, set up a national library and theater and establish regulatory bodies in the fields of drama, visual arts, letters, music and — architecture.

Split Level House

The three-bedroom house pictured above is one of seven built this summer by three architectural students at the University of Toronto who set up their own firm to gain actual working experience. The houses offer combined living-dining room, general purpose room, utility room, water-cooled roof, copper radiant heating and plumbing and are priced at about $18,000.

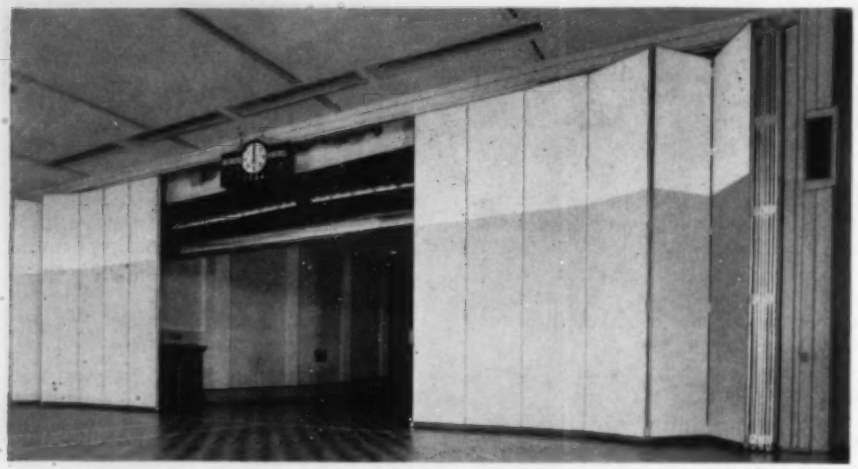
All Aluminum Bridge Begun

Further evidence that aluminum has graduated from the pots and pans class into a full-fledged structural material is provided by the world's first all aluminum highway bridge. It's being constructed at Arvida, Quebec. Insofar as is known there are only two other aluminum bridges in existence, one an experimental railway span at Massena, N. Y., the other a double leaf bascule bridge recently completed in England.

Plans call for opening the bridge to traffic by the end of the year. It consists of a main span, a fixed arch 290 ft. long, and five 20-ft. approach spans at each end. The rise of the main arch is 47½ ft. and the total length of the bridge, abutment to abutment, is 504 ft. By way of comparison, the height of the Statue of

(*Continued on page 174*)

SpaceSavers...
FOR SCHOOLS LARGE OR SMALL

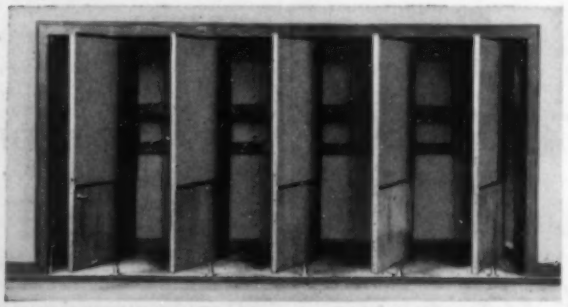


R-W DeLuxe FoldeR-Way Partition ***Automatic—Electric***

Specifically designed for school gymnasiums, auditoriums, stages, and other high or wide openings which must be closed against both light and sound, DeLuxe FoldeR-Way partitions by Richards-Wilcox are completely automatic and cost less than many manually operated partitions. To economize in space and expenditures, consider R-W DeLuxe FoldeR-Way partitions in your building or remodeling plans.

R-W No. 883 Multiple Action School Wardrobe

An outstanding feature of Richards-Wilcox Classroom Wardrobes is that the entire unit is designed to avoid overcrowding. The hat and coat racks accommodate eight or ten pupils for each door. Note slate blackboards mounted on wood doors.



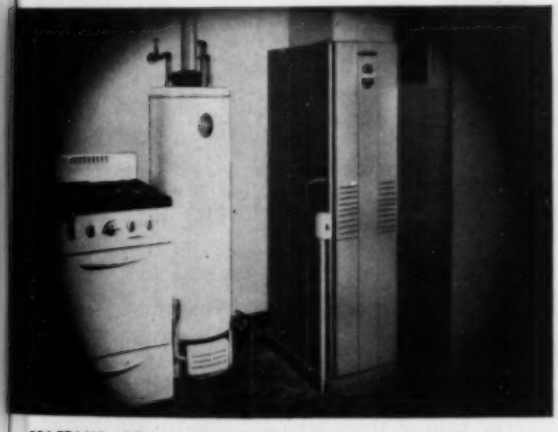
For complete information about R-W DeLuxe FoldeR-Way Partitions and Multiple Action School Wardrobes, contact our nearest office.

Richards-Wilcox Mfg. Co.
"A HANGER FOR ANY DOOR THAT SLIDES"
AURORA, ILLINOIS, U.S.A.
Branches: New York Chicago Boston Philadelphia Cleveland Cincinnati Washington, D.C. Indianapolis St. Louis New Orleans Des Moines Minneapolis Kansas City Los Angeles San Francisco Denver Seattle Detroit Atlanta Pittsburgh

1880 RICHARDS WILCOX R-W AURORA 1949
OVER 69 YEARS

View of *Lewis Gardens Apartments*, Henrico County, Va.; *Architect*, W. H. Pringle, Richmond, Va.; *Builder*, Franklin A. Trice, Richmond, Va.

...of GAS ADVANTAGES beyond the city mains



526 TEAMS of Bryant Model VS-304 Winter Air Conditioners and Bryant *Black Seal* Automatic Water Heaters provide *Personalized Heating* at Lewis Gardens. LP-Gas for this equipment is supplied by Henrico Gas Service Corp., created especially to serve this project by E. O. N. Williams, President of Bottled Gas Corp. of Virginia, Richmond, Va.

There is a Bryant *Personalized Heating* system in each of the 526 suites at Lewis Gardens. Each family enjoys *independent, automatic control* of all heating in its own home. Indoor temperatures are as they want them, and there is no waste heat. There is always plenty of hot water on tap, too, for each family has its own *individual* hot water service.

For *management*, there are these benefits: *Personalized Heating* is maintained at low cost. It requires the supervision of only one man. Service or repair, if necessary, is *quickly* performed, for it is entirely local. There can be no general heating breakdown in the project.

Lewis Gardens is beyond the range of the Richmond city gas supply. Yet, its occupants enjoy the unmatched advantages of gas for *all four* important household services—heating, water heating, cooking and refrigeration. These advantages are provided by *liquefied petroleum gas*, supplied from a specially-designed central distribution system within the project itself.

Personalized Heating is the basis for this *all-gas* service. Operational economies of this equipment on LP-Gas help make possible a combined low rate for four services that will make its yearly cost to Lewis Gardens families comparable to or less than that of any other fuel or combination of fuels.

You will have a heating problem in your next project *beyond the gas mains.* Ask your Bryant Distributor to show you how you can solve it successfully with LP-Gas and *Personalized Heating.*

Let the pup be furnace man
... and water boy, too!

bryant

AUTOMATIC HEATING

BRYANT HEATER DIVISION
AFFILIATED GAS EQUIPMENT, INC.
Cleveland, Ohio • Tyler, Texas

"Bryant *Personalized Heating* Saved Space, Helped Make Four Gas Services Possible"

says FRANKLIN A. TRICE, Builder and Developer, Richmond, Virginia

"Economies provided by Bryant Personalized Heating helped make it possible to offer the advantages of LP-Gas for four services at an attractively low combined rate. And, considering that its space-saving feature was a truly great construction advantage, *Personalized Heating* was a happy choice for us."

NEWS FROM CANADA (*Continued from page 172*)

Liberty, including pedestal, is 456 ft.

The bridge roadway is 24 ft. wide and is flanked by two 4-ft. sidewalks. The roadway and sidewalks are formed so as to provide a continuous slab over the entire surface of the bridge between its expansion joints. Lighting is supplied by fixtures concealed under the top guard-rail, and two ornamental pylons, also indirectly illuminated, make an imposing entrance to the bridge.

Because it's aluminum, the superstructure will weigh only 400,000 lb., half as much as steel. But, although it's so much lighter, it's unlikely to blow away! It has been engineered to meet either of two extreme loading conditions: two 20-ton transports moving along it abreast, or a 50-ton transformer hauled on a 12-ton float by an 18-ton tractor.

The city of Arvida floated a bond issue for $500,000 to pay for the bridge, its superstructure and approaches. This is somewhat more than steel would have cost, despite economies in freight and erection charges, but it is hoped to save on painting. A number of prominent engineers collaborated on the design of the bridge, and advisors on its esthetics included architects H. L. Fetherstonhaugh, of Montreal, and the late Paul Cret, of Philadelphia.

John Palmer Photo

John B. Parkin, of John B. Parkin Associates, Toronto architectural firm (designers of the hospital pictured on page 10 of this issue), has been elected to a fellowship in the Royal Institute of British Architects

Urges Research Institute

The progress of housing in Canada and the world would be facilitated a great deal if an international organization could take over the difficult task of education, demonstration and the interchange of experience between countries. So writes Dr. E. G. Faludi, Secretary of the Institute of Professional Town Planners, in a recent issue of the Institute's Review.

"The world," says Dr. Faludi, "needs the help of those who are able to contribute to the rebuilding of the destroyed countries, and to the progress and improvement of the others which were not directly affected by the war. The task to be accomplished is gigantic and neither individuals nor countries will always be able to find the right solution without international collaboration."

With considerable skill, the doctor argues that an international Housing Research Institute is likely to contribute more to the cause of human progress than any national organization, however skillfully organized. That Canada as yet has no national research center and the

(*Continued on page 176*)

New Patterns - New Beauty - New Ideas

To give your clients smart, luxurious interiors at big savings, specify the distinctive new Wood and Marble Patterns now available in Marlite plastic-finished wall and ceiling panels. Here's all the warm beauty of fine finished woods, the stately grandeur of imported marbles—plus economy of installation and maintenance. Marsh harmonizing mouldings are available in Aluminum Alloy and Presdwood for both Wood and Marble Patterns.

See Sweet's Architectural File for details on the wide range of Marlite sizes, colors, and patterns.

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1. REPEL TERMITES
2. RESIST DECAY
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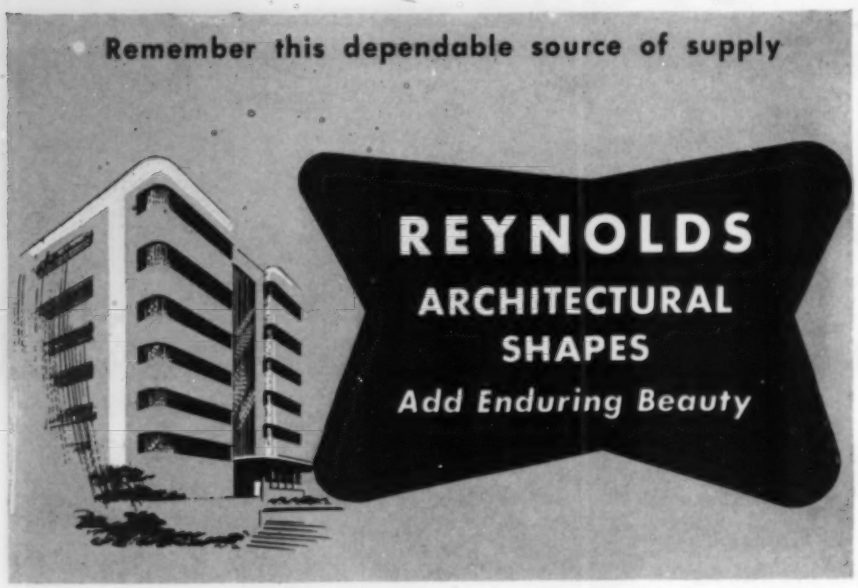
BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

NEWS FROM CANADA (*Continued from page 174*)

Public school at Whitby, Ont., designed by Murray Brown and Elton, architects



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world no international one shows, in his opinion, how far "we are from a real attack on the great social problem of housing."

Nails Plentiful This Year

Nails are now being produced in increasingly satisfactory quantities. Last year Canada's building program might have bogged down had not steel rod normally used for other purposes been diverted to their manufacture.

The Dominion Bureau of Statistics reveals that output during May amounted to 8124 tons compared with 6590 in the same month a year ago. This production boost raised the five-month total for 1949 to 37,058 tons, compared with 33,393 for the corresponding period in 1948.

Work Starts on New Subway

Hon. Ray Lawson, Lieutenant-Governor of Ontario, lifted a block from the pavement in front of the Toronto Transportation Building on September 8 to signify that the building of Canada's first subway had begun.

While it won't affect the city's skyline — still the North American symbol of urban prestige — the new rapid transit system will be Toronto's biggest project in steel and concrete for years to come. Its ultimate cost is estimated at $50 million. Construction of the first section, 7000 ft. in length, is being handled by a unique syndicate of one Canadian and three U. S. firms. They have been awarded the general contract on a unit price basis. It amounts to about $10 million, with financing and responsibility "jointly and severally."

Calls for Housing Handout

The Community Planning Association of Canada has again recorded its belief that a subsidized low-rental housing program is the only solution to our shelter problem. The Association is a nationally organized citizen group having about 500 members.

In a statement timed to coincide with preparations for federal government meetings with provincial and municipal representatives on the housing question, R. E. G. Davies, president of the Association, called for a program to include families of below-average income. "Our housing efforts so far," he claims, "have left half the tenants in Canada out of the picture."

Mr. Davies points out, as he often has in the past, that rental subsidies are

(*Continued on page 178*)

. . . at WENDER & ROBERTS Inc.
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Engineer: Harry Yopp, Georgia Power Company
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Lighting Equipment: 34 Litecontrol No. 4044 louvered, 4-lamp fixtures, plus perimeter lighting, incandescent spotlights and showcase lights
Lamps: 40 watt, 3500° white
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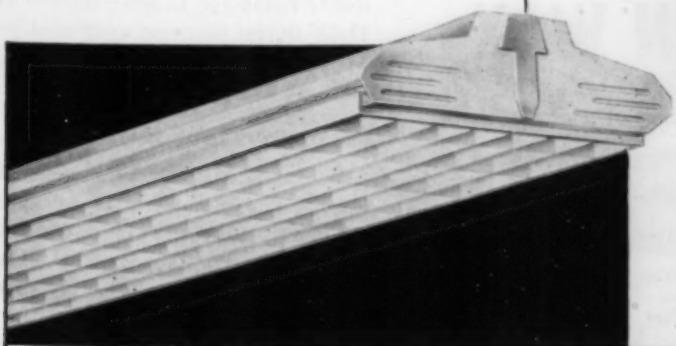
Whether your clients are interested in selling more goods or in increasing visual efficiency, you'll find it will pay to prescribe Litecontrol fixtures. In this wide line, there are sturdy, graceful units that smoothly blend with any architectural design. All are extra-sturdy in construction, easy to install, built to give your clients more years of ample, glareless light with minimum maintenance. Write today — we'll be glad to help you by supplying complete lighting layouts.



. . . with LITECONTROL NO. 4044 FIXTURE

Offering full light distribution with low surface brightness, this fine Litecontrol unit is also distinguished by unusually low installation and maintenance costs. Hinged louvers swing down for easy lamp replacement and cleaning.

Cat. No.	No. of Lamps	Length	Width	Height	Approx. Ship. Weight
4044	4-40W	49"	16"	5¼"	44 lbs.
4000-20 Downlight reflectors					6 lbs.

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Fixtures
KEEP UPKEEP DOWN

DESIGNERS, ENGINEERS AND MANUFACTURERS OF FLUORESCENT LIGHTING EQUIPMENT DISTRIBUTED ONLY THROUGH ACCREDITED WHOLESALERS

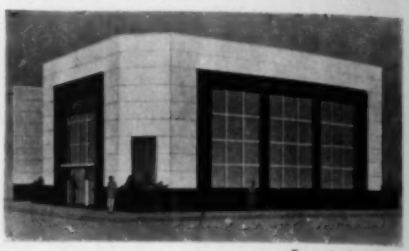
required to make new dwellings available to deserving families. "We realize that analysis and negotiation are needed to establish the exact share of initial and operating responsibility at each level of government. But Canadians are worried about what our society as a whole pays for the lack of a low rental program."

The Association head went on to summarize what he said was the essence of most Canadian recommendations in recent years:

1. Municipal government should, wherever possible, manage public housing by setting up an independent authority for this purpose.

2. Provincial governments should authorize the municipal management of public housing. Where such housing is needed and the municipal government is unable to supply it, the province should take the initiative.

3. The federal government should lend nine-tenths of the initial cost of public housing to the municipal or provincial government undertaking its construction. The loan should be amortized over a period of at least 40 years and bear an interest rate not higher than 3 per cent.



Tony Archer Photo

Bank of Montreal

Construction will start soon on the first drive-in Canadian bank to be constructed by the Bank of Montreal in Vancouver. Plans for the new office call also for inside baby carriage parking area. The exterior finish of the building will be stone with black marble trim. Sharp and Thompson, Berwick, Pratt are the architects in charge.

Housing Still Forges Ahead

In a recent review of Canada's economy, the Dominion Bureau of Statistics points out that an estimated 7374 dwelling units were completed during the month of May, or 17 per cent more than in May 1948. Cumulative total of completed units for the first five months of the current year was 32,451, an increase of almost 33 per cent over the same period last year.

New dwelling units, not completed but under construction, totaled 53,533 as of May 31 last, compared with 44,572 on May 31, 1948. Starts during the month numbered 12,809 compared with 11,407 during the same month last year. About two-thirds of all dwellings being built are for owner-occupancy.

Brickmakers Launch Program

William C. McGolpin, President of the Brick & Tile Manufacturers' Association of Canada, announces that clay products manufacturers in Canada and U. S. have embarked on a million dollar program of brick and tile research.

"The brickmakers have pledged more than $250,000 a year for a five-year, long range industry-wide research program," Mr. McGolpin states. "The research will be concentrated on end-use of structural clay products." Election of an 18-man board to manage the program is proceeding.

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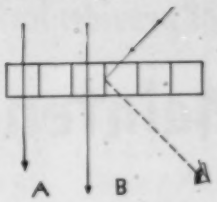

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THE PHILADELPHIA SAVING FUND SOCIETY . . .

(*Continued from page 95*)

traffic through the main banking room has increased from 1250 persons to about 2500. Fortunately there was space for much of the increase. The Society is not certain but suspects with gratitude that the architects provided a series of corner offices, one above another and connected by a private elevator, for the precise purpose of housing the chief officers when the change from branch to head office should be made. When the demand for safety deposit boxes increased, room for more was found waiting in the vault. Doubled banking traffic doubled the number of tellers' windows required and more than doubled the work, entailing the use of numerous machines. Some time after the building's opening, George Howe says, a scheme of U-shaped teller spaces, following the original counter outline and in plan much like the arrangement whose installation has just been completed, was developed in collaboration with Louis McAllister (who ran the Howe & Lescaze office in 1932 and now has his own Philadelphia office). That scheme was never detailed. As now rebuilt, the counters were designed by the building's own competent tenant architect, Alexander Hazell, using unframed plate glass and, surmounting the original black counter, some of the light gray marble left over from 1932.

In the original banking room design, general lighting was indirect, coming entirely from incandescent lamps concealed above the long air conditioning baffles just beneath the ceiling. This supplied relatively few foot candles at counter levels; intentionally, there were individual counter lamps for local high-intensity lighting. Also, in accord with then accepted technical theory, the heat load of the general lighting sources was to be overcome by the air conditioning system. Today such a theory is questioned; operating costs usually force minimizing of the lighting heat load. Because the local lamps occupied valuable counter space and to reduce the air conditioning load by an appreciable number of tons of refrigeration, then, the owners have disconnected the original general lighting, removed the counter lamps, and installed recessed, lensed downlights which, sparkling in the high ceiling and reflected in the polished marble walls, supply 30 or more foot candles at counter height. Neither Howe nor Lescaze was consulted on this change.

Second-guessing the structural (Purdy and Henderson) or mechanical (R. Berkeley Hackett) engineers on PSFS is difficult. The great difference in column spacing between lower and upper floors is a logical solution of the differing requirements of stores and bank vs. rentable office space. The great load of the tower on the trusses above the banking room ceiling and on the columns below entailed massive construction which was considered as a series of rigid frames in designing the tower wind bracing. For this purpose kneebraces were used at every girder-to-column connection, to develop full continuity in the girders. Possibly a different form of

(*Continued on page 182*)

WE CHALLENGE YOU
to specify THE DOOR that assures:
Beauty, that's more than superficial,
Endurance, that provides lasting value,
Minimum Maintenance,
+ the balance feature
that lets traffic through
QUICKLY

You have all this in
Ellison, the BALANCED DOOR
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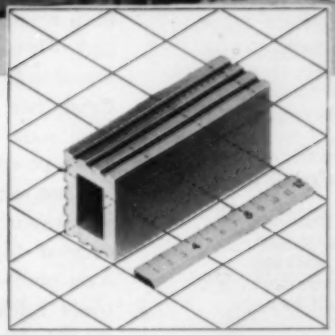
(Above) X-ray Room with walls of Natco Glazed Structural Facing Tile in St. Francis Hospital, Pittsburgh, Pennsylvania.

(At Right) Kitchen in Bryce Hospital, Tuscaloosa, Ala. Walls of Natco Structural Glazed Facing Tile. Warren-Knight & Davis, Architects; Foster & Creighton Co., Contractors.

(Below) Natco Glazed Structural Facing Tile used in the Mayo Hospital, Rochester, Minnesota. O'Meara and Hills, Architects; McGough Brothers, Contractors.

Modular Coordination

Tile with 12 inch ruler is laid at right on grids made up of 4" squares. This 4" module unit of measure is the basis of modular coordination for all building materials and equipment.



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All the requirements of interior hospital walls—cleanliness, germ-resistance, moisture proof, fire-safety, cheerful brightness . . . all of these are met with walls constructed of Natco Glazed Structural Facing Tile.

First cost is last cost . . . because Natco Glazed Structural Facing Tile needs no maintenance except occasional soap and water cleaning . . . no painting, no repairs, ever. They are economical to erect, too . . . because they are available in modular sizes, which means little or no cutting on the job . . . saving material and labor, with better workmanship assured. Write for descriptive Catalog PF-47.

Architects—See Sweet's Architectural File No. 4-A-8 for details.

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THE PHILADELPHIA SAVING FUND SOCIETY . . .

(*Continued from page 180*)

haunch, perhaps welded, might be used today; the detail is mentioned, however, because it is an instance of recognition of the structural principle of continuity at a time when that was not common practice.

Utilizing continuity gave practical benefits. Office stories are only 12 ft. floor-to-floor. While the knee-braces cut down considerably on the headroom around columns, column spacing (17 ft. 8 in.) is such that a bay accommodates a pair of average-sized private offices or one larger office; in these instances braces are in the plane of partitions. In large general office space, it is true, headroom appears to be low (1932 office photo shows one condition, 1949 photo the other). To gain every possible inch of headroom, the ceiling is not furred; beams, the underside of the floor slab, and air conditioning ducts, all plastered, are exposed. All this results in a minimum cubage for the total rentable area. Without air conditioning and ample daylighting the relatively low ceilings might be oppressive; with them — and the scheme included both from the beginning, at least in the architects' minds — this is not much of a problem.

Although air conditioning for the entire building was not accepted until construction of the steel frame was almost complete, space was found without much difficulty for the ducts and equipment — another instance of advance planning? — which has all functioned perfectly for 17 years. In 1949, one unit broke down and was out of service for a few days; to obviate further difficulties, an additional standby unit is to be installed shortly.

The cooling towers on the roof are concealed by the sign whose huge neon initials, PSFS, have become a landmark. The owners were at first dubious (this was in pre-alphabetical-agency days) of the dignity of such a sign; but when they saw that the Society's full name was undecipherable from any distance they acceded. Since, PSFS has become the name by which the bank is generally identified.

As to materials, there have been two instances only in which today's knowledge might have been of benefit. All the large panes of glass at bank level have been reset; some time ago one fell out and others cracked. The cause, determined to be hardening of the setting material, has been remedied. At another time some brick joints were observed to be powdering; though the condition was not serious, as a part of their policy of preventive maintenance the owners decided to repoint all brickwork. In some places the hard surface glaze of the tower brick appears to be weathering. Interior surface finishes — marble, sheet bronze and stainless steel, rubber tile flooring, painted plaster in rented offices, even the plywood panels surfaced with rare woods which line the directors' suite on the top floor, all have a record of relatively easy maintenance and, for items such as the sheet metal, of thorough polishing required at extremely infrequent intervals. In part, air conditioning is credited for this.

NO VISIBLE WEAR

AFTER *30* YEARS OF CONSTANT USE!

Stairs get a lot of punishment in 30 years under the thousands of busy feet which go up and down them—year in, year out. Yet this unretouched photograph (just taken) of the "Feralun" stair treads, installed 30 years ago in the plant of the Dennison Manufacturing Co. at Framingham, Massachusetts, shows no evidence of more than a quarter-century's "foot traffic." 30 years of resistance to wear! 30 years of non-slip underfoot safety! Good for many years to come!

Examples like this show why architects, engineers and builders insist on "Feralun"* treads, nosings and plates. Made of cast iron with wear-resistant abrasive particles embedded in walking surfaces, "Feralun" provides a sure-footed "grip" that keeps feet from slipping—and wears and wears. The coupon below will bring you full information on "Feralun." Send it today.

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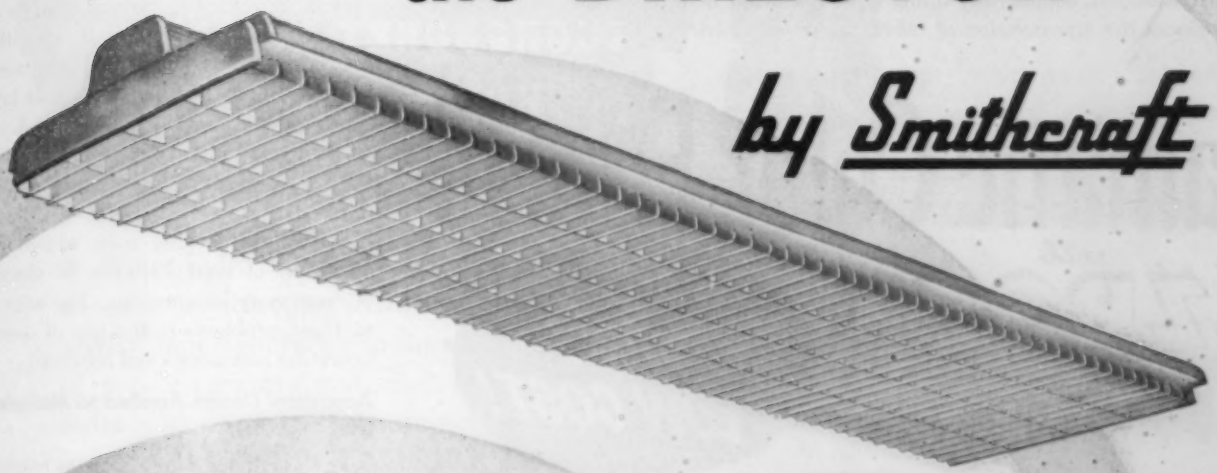
A New Slimline Lighting "Element"

the DIRECTOR

by Smithcraft



AN "AREA-OF-LIGHT" SOURCE

Director, by Smithcraft, is a louvered fluorescent lighting "element" . . . an extensive, yet unobtrusive, "area-of-light" source, which effectively develops the advantages of the new 75-watt instant-start T-12 8-foot lamp. Director is available for two, three, four and six T-12 96" 75-watt lamps; two, three, four and six T-8 96" Slimline lamps; and, in matching units, for two, four and six T-12 40-watt lamps with instant-start ballasts. This unit provides a downward component of light varying from 70% for the two-light unit to 55% for the six-light unit. Cutoff from lamp glare is 35° lengthwise and 30° crosswise from the rigid and square louvers. The Director can be surface or pendant mounted, individual or continuous rows. Director is constructed of electrolytic zinc-coated bonderized steel and finished in white supercoat baked enamel with more than 85% reflectivity. Maintainance and installation are effectively simplified in the Director — another new and outstanding fluorescent unit by Smithcraft — manufacturer of "America's finest lighting fixtures" and the leader in progressive lighting design.

Smithcraft

LIGHTING DIVISION

CHELSEA 50, MASSACHUSETTS

(Continued from page 145)

sary to supply a resilient mount or base support for the device. In addition, if a serious problem is created by generation of airborne noise from the machine it may be advantageous to build an enclosure of fairly substantial walls to act as sound barriers. In the case of noisy hot air heating systems it may be necessary to provide sound absorbing ducts. In addition, acoustically lining a duct reduces the transmission of other sounds through the duct — say machinery noise occurring in the basement; such lining should be fire-resistant.

Bathroom noises are often quite a problem. Here an important item to consider is the use of wall and floor constructions which have high sound transmission losses. The bathroom door is often the chief cause of sound leaks inasmuch as it is usually of the lightweight variety. Precautions outlined previously in connection with doors should also be followed with regard to bathroom doors. Some plumbing equipment, such as flushing mechanisms used in toilets, may be obtained which are fairly quiet in their operation. In some cases plumbing noise is transmitted by way of pipes which are tied directly to adjacent wall structures. This condition may be remedied by wrapping resilient materials around the pipes between the pipe hangers or straps which are fastened to the wall. If the pipe line is split into shorter sections which are coupled together by sections of a resilient material, the transmission of vibration is greatly reduced.

Sometimes clicking noise caused by operation of light switches, or closing of doors may be annoying. The answer to these problems is the use of quiet-operating accessories and hardware.

Acoustical Design Applied to Multiple Dwelling Units

In this category are problems relating to adequate privacy between dwelling units which are occupied by different family groups. Many of the precautions outlined in previous sections apply, with the exception that requirements for sound insulation in the case of multiple dwelling units are more stringent.

The basic idea in providing sound insulation between multiple dwelling units is to have very effective constructions, walls and floors, between adjoining units. The transmission loss of such party walls and floors should be at least 45 db and preferably 50 db. While it is possible to use massive homogeneous masonry walls and floors, there is considerable advantage to the use of double-sandwich type walls and floors. For one thing, a massive single wall or floor construction, while it may be an effective insulator for airborne sound, is a very poor insulator for impact or other noises caused by direct mechanical impact.

From this point of view, one suitable method of construction would consist of a massive core divided both horizontally and vertically by the floors and walls between separate units, as shown in Fig. 7. In each one of these cells or boxes a secondary box would be located suitably subdivided into the appropriate number of rooms. If the box is made sufficiently rigid and self-supporting such as in Fig. 8, it could be supported on the

(Continued on page 186)

Dramatic Color Effects with AZROCK ASPHALT TILE at Amazingly LOW COST!

The Flooring for beauty-Economy-Versatility-Longevity

Good looks, low cost and long life are three "musts" for the brightly attractive flooring that has become an integral part of today's residential and commercial building program — and AZROCK Asphalt Tile meets the challenge with ammunition to spare.

1 A full range of colors makes AZROCK's pattern possibilities almost limitless.

2 Installed cost is wonderfully low, and upkeep is as inexpensive as it is simple.

3 Top quality and longevity are attested to by AZROCK floors that have been in service 15 years and more, and still retain their new-floor good looks.

When specifications call for *greaseproof* flooring, premium-quality AZPHLEX asphalt tile will meet the most rigid specs — without blasting the budget. This is the most nearly universal floor covering ever produced . . "The asphalt tile that has everything!" Both of these colorful lifetime tiles can be laid over wood, concrete or metal sub-floors, on, above or below grade.

For complete information contact your AZROCK-AZPHLEX dealer — or write to Dept. A. Please identify yourself as architect, contractor, owner, etc.

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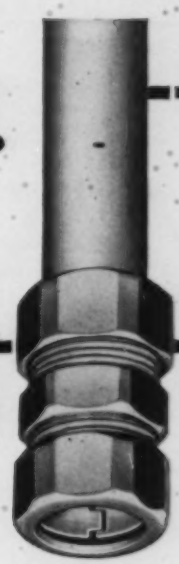
ELECTRUNITE E.M.T.

the ORIGINAL lightweight rigid steel wiring raceway

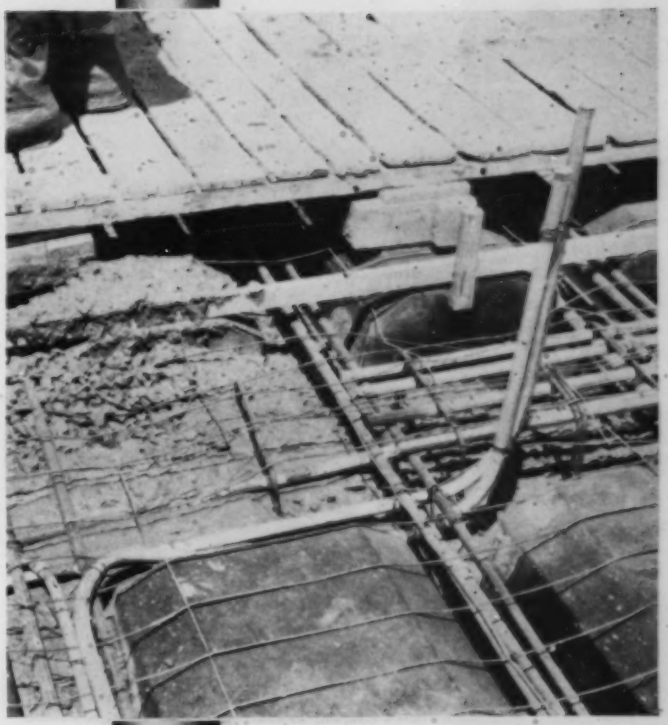
PROVIDES WATER-TIGHT PROTECTION THROUGHOUT THE INSTALLATION



● Water-tight protection—particularly in concrete construction installations—is a vitally important factor in the specification of wiring raceway material. That's why more and more architects are specifying Republic ELECTRUNITE E.M.T. —the time-saving, light-weight rigid steel raceway.

With modern compression fittings, such as that shown in the illustration, properly applied and tightened, there can be absolutely no danger of joint seepage in an ELECTRUNITE raceway installation. Actual test and records of countless installations in concrete construction, have proved that fact many times over.

For complete information about *all* of the up-to-date advantages of ELECTRUNITE E.M.T., call your nearest Steel and Tubes Division Representative, or write today to:



Close up view of first-floor raceway installation in large midwestern hospital project illustrates a typical application for ELECTRUNITE E.M.T. "in concrete".

REPUBLIC STEEL CORPORATION
STEEL AND TUBES DIVISION • CLEVELAND 8, OHIO
Export Department: Chrysler Building, New York 17, New York

SEE SWEET'S FILE
or write us for detailed information on these Republic Steel Building Products:

Pipe—Sheets—Roofing
Enduro Stainless Steel
Toncan Enameling Iron
Electrunite E.M.T.
Fretz-Moon Rigid Steel Conduit
Taylor Roofing Ternes
Berger Lockers, Bins, Shelving
Berger Cabinets for Kitchens
Truscon Steel Windows, Doors, Joists and other Building Products

Republic
ELECTRUNITE E.M.T.

(*Continued from page 184*)

core structure by an appropriate floating floor, possibly a concrete slab on a resilient pad, or on beams or joists mounted on resilient pads. Another possibility for the box-within-a-box construction is to float the floor, suspend the ceiling, and secure the outer vertical walls of the inner box by resilient or loosely coupled elements, Fig. 9. Adequate walls in the inner-box unit should be provided. Still another possibility is to separate the massive core into self-supporting vertical units so that each unit is separated by an air-space.

It is important that both wall and floor construction should have sound insulation ratings which are roughly comparable. In other words, if an effective party wall is used with a poor floor, it is possible for more sound to be transmitted into the room adjacent to the party wall indirectly by way of the floor construction than is transmitted through the wall.

Inasmuch as in ordinary building materials — i.e., concrete, brick, or wood — sound is not reduced very much in transmission over even long path lengths, the sound may reappear readily in other parts of a building which may be remotely removed from the original source room.

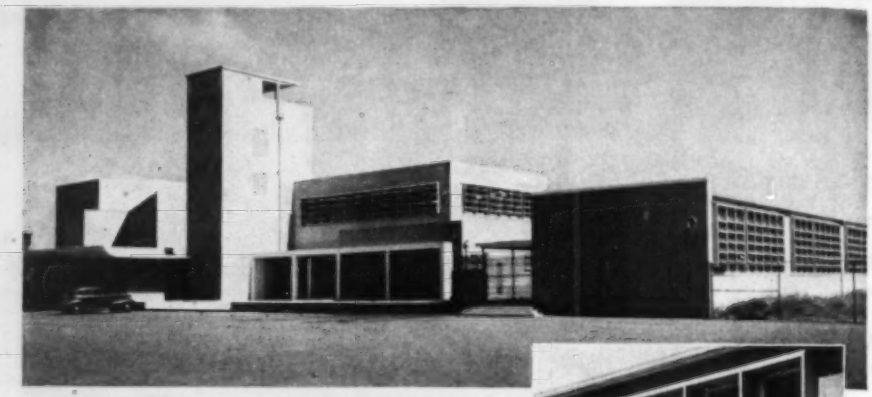
Another possibility, which has been particularly exploited in European multiple dwelling building projects, is that of locating the massive load-bearing walls in the interior of the building in such a way that they function as effective party walls in addition to supporting the building.

Arrangements of rooms according to compatibility of function on opposite sides of a party wall is an important consideration. Thus it is advisable not to locate a kitchen in one apartment next to a bedroom in the adjoining housing unit.

Mechanical equipment, such as central-heating units in multi-family structures are often high-powered devices which must serve many apartments at one time. Usually they are located in the basement, and apartments located directly over and adjacent to such equipment are subjected to high noise levels caused by their operation. In such cases, it is well to provide a particularly effective floor construction as a sound barrier. In addition, other precautions mentioned in the section pertaining to single dwellings, to prevent the transmission of vibration along heating pipes, should be followed. In the summer open windows in apartments near the basement will be a problem, if equipment is in operation at that time. A somewhat better way to handle this type of situation is to provide a special small service building for mechanical equipment separated from the housing units.

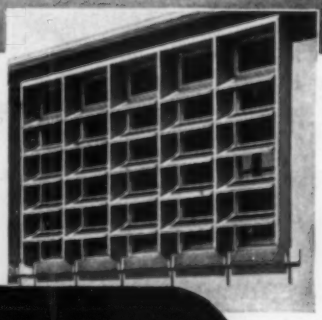
Conclusion

In the foregoing discussion we have not touched upon the problems involved in remodeling and additions to existing buildings. From the principles described it is believed that one could apply the correct acoustical principles to any special problem. In many instances the acoustical measures outlined will be expensive, yet no one should be deluded by the effectiveness of halfway measures.



AN UNUSUAL INSTALLATION
South Broward High School, Hollywood, Florida
Architects: **Clinton Gamble Associates, Fort Lauderdale, Fla.**
Bayard Lukens, Hollywood, Fla.

All Gate City Awning Windows glazed with heat-resisting and glare-reducing glass. Concrete fins (right) keep sunlight from entering rooms diagonally between sash.



Coolest Under the Sun...

In countless locations, in city as well as country, Gate City Awning Windows are satisfactorily answering the need for adequate ventilation—and doing so *without mechanical assistance!*

Completely adjustable, these windows induce fresh air to enter when days are calm . . . break up and deflect breezes . . . eliminate drafts . . . protect against damage by rain. Precision fabricated of toxic-treated wood, they are economical to install, easy to operate and rot-resistant. One redecorating bill avoided by the rain deflecting sash more than pays any additional initial cost!

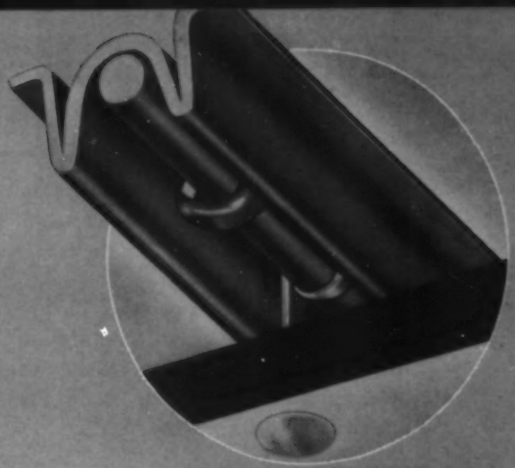
No matter what the location or climate, you can assure abundant light and scientifically controlled ventilation—with Gate City Awning Windows. For data refer to Sweet's or write direct to Gate City Sash & Door Co., Dept. AP-10, Fort Lauderdale, Florida.

AWNING WINDOWS BY
Gate City

Offices and Factory: Fort Lauderdale, Florida • Export Sales Representative: Frazar & Company, 50 Church Street, New York 7, U.S.A. • Cable Address: Frazar, N. Y. • Agents in principal cities throughout the world

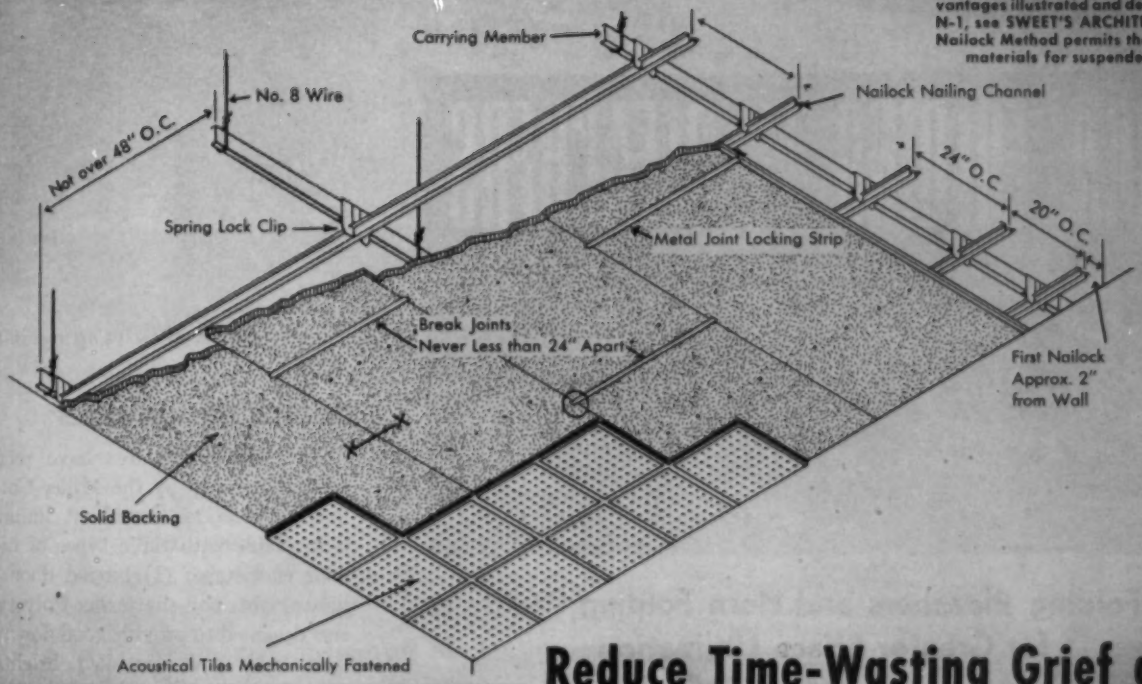
For Suspended Ceiling Construction

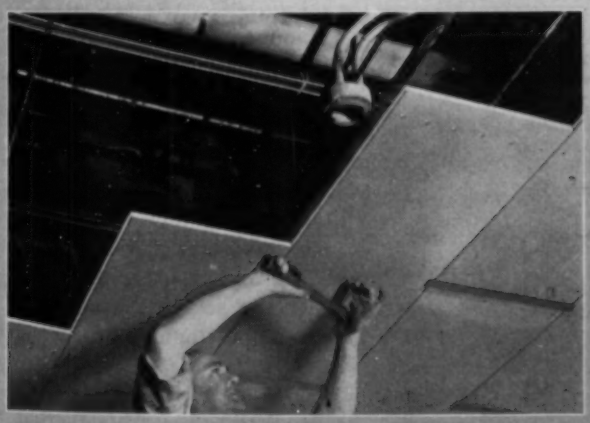
Use *Nailock*



Safest and Simplest Method

The Nailock Method is the simplest and safest method of installing a suspended ceiling with or without acoustical tiles. This method presents many exclusive advantages illustrated and described in Nailock Catalog N-1, see SWEET'S ARCHITECTURAL FILE, 11b/1. The Nailock Method permits the use of a wide variety of materials for suspended ceiling construction.



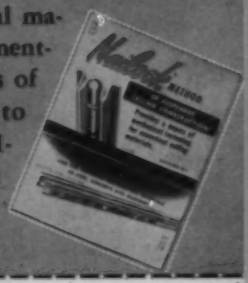


Permits Use of Any Acoustical Materials Required

Installation with Nailock requires only three operations. This shows nailing solid backing to Nailock Universal Nailing Channel with Nailock Nails which form locking loop around rod. Assures rigidity and permanency and safety.

Reduce Time-Wasting Grief and Time Costs on Suspended Ceiling Jobs

● Nailock Universal Nailing Channels provide a means for securely fastening every unit in place, and assure a rigid, safe and permanent suspended ceiling installation. It permits the use of larger crews in making installations in large areas due to the speed with which Nailock Universal Nailing Channels can be attached to carrying members and the simplicity of nailing backing or backerboard materials to these channels. The Nailock Method permits the use of any type of acoustical materials attachable by mechanical means, or by cementing, and all of the usual methods and materials of finishing a ceiling, including plastering. Refer to Nailock Catalog N-1 in SWEET'S 1949 ARCHITECTURAL FILE, 11b/1. Catalog available on request. Please use coupon.



NAILOCK STEEL DIVISION

THE SANYMETAL PRODUCTS CO., INC.

1704 URBANA ROAD • CLEVELAND 12, OHIO

Nailock Steel Division, The Sanymetal Products Co., Inc.
1704 Urbana Road, Cleveland 12, Ohio

Please send Nailock Catalog N-1 and name of nearest Nailock Distributor.

Name ..... Position .....

Company .....

Address .....

City ..... State .....

(Please attach to your business letterhead)

(*Continued from page 146*)

the analyzer tube, eliminating the possibility of error in zone indication. A relay in the control panel, operating on fire signal, can be used to operate ventilating fans, dampers, door-closing releases or power cutoff. Walter Kidde & Co., 40 E. 34th St., New York 16, N. Y.

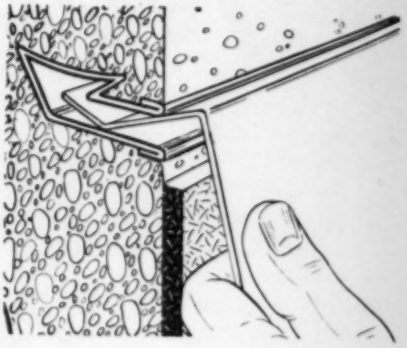
FLASHING

A new method of installing counter flashing is designed to eliminate excessive labor, prevent leakage for practically the life of the building and to reduce roof repairs.

A rolled metal form, called *Fry Flashing Reglet*, is attached to the forms for imbedding in concrete parapets, or placed between courses on masonry construction. Counter flashing, supplied by the sheet metal contractor, can be inserted in the reglet in a few minutes without grouting or soldering.

Plastic rope, supplied with the reglet, makes the weather seal. It is rolled into the space between the reglet and flashing with a wheeled tool, making contact at all points between the two surfaces.

When roof maintenance is required, only the plastic rope has to be removed in order to take out the flashing. Fry Reglet Co., Division of Watts Electric & Mfg. Co., Birmingham, Mich.



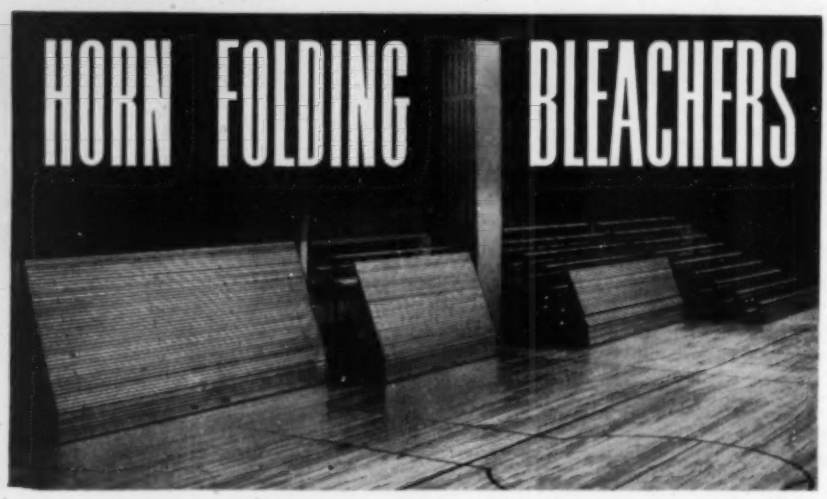
Flashing simplified by using metal forms

FLUORESCENT LUMINAIRES

Two new luminaires have recently been introduced by the Miller Co. The first, a luminous downlight luminaire, is available with three types of hinged door enclosures: (1) hinged door with lightweight, non-shattering Polystyrene lens designed to provide good downward light with well-controlled brightness; (2) hinged metal louver door, with predominant downward distribution of light shielded 40 degrees clockwise and lengthwise; and (3) hinged door with crystal clear, prismatic Lucite lens, designed for brightness control both crosswise and lengthwise. All three have curved side panels of diffusing extruded Polystyrene, providing upward light to minimize contrast between luminaire and ceiling. The door enclosures hinge down from the reflector for servicing and cleaning. The *Hartford* is available in 48, 72 and 96-in. lengths. In 48-in. lengths, two or three 40-watt fluorescent lamps are used, and in 96-in. lengths, four or six lamps. In the 72 and 96-in. lengths, 2 or 3 Slimline lamps are used.

The *Berkeley* is a new all-metal fluorescent luminaire designed particularly for schools, stores, offices and commercial interiors. The predominant downward distribution of light is shielded 40 degrees crosswise and 30 degrees lengthwise. Approximately 43 per cent of the total light is directed upward to minimize contrast. If no upward light is

(*Continued on page 190*)



Horn Folding Bleachers and Horn Folding Partitions for Greater Space Utilization

CHECK YOUR SPACE REQUIREMENTS

ROWS	FLOOR SPACE		**HEIGHT
	IN USE	*CLOSED	
3	4 Ft. 9 In.	1 Ft. 8¾ In.	3 Ft. 0 In.
4	6 Ft. 7 In.	2 Ft. 0⅛ In.	3 Ft. 9 In.
5	8 Ft. 5 In.	2 Ft. 3½ In.	4 Ft. 6 In.
6	10 Ft. 3 In.	2 Ft. 6⅞ In.	5 Ft. 3 In.
7	12 Ft. 1 In.	2 Ft. 10¼ In.	6 Ft. 0 In.
8	13 Ft. 11 In.	3 Ft. 1⅝ In.	6 Ft. 9 In.
9	15 Ft. 9 In.	3 Ft. 5 In.	7 Ft. 6 in.
10	17 Ft. 7 In.	3 Ft. 8⅜ In.	8 Ft. 3 In.
11	19 Ft. 5 In.	3 Ft. 11¾ In.	9 Ft. 0 In.
12	21 Ft. 3 In.	4 Ft. 3⅛ In.	9 Ft. 9 In.
13	23 Ft. 1 In.	4 Ft. 6½ In.	10 Ft. 6 In.
14	24 Ft. 11 In.	4 Ft. 9⅞ In.	11 Ft. 3 In.
15	26 Ft. 9 In.	5 Ft. 1¼ In.	12 Ft. 0 In.
16	28 Ft. 7 In.	5 Ft. 4⅝ In.	12 Ft. 9 In.
17	30 Ft. 5 In.	5 Ft. 8 In.	13 Ft. 6 In.
18	32 Ft. 3 In.	5 Ft. 11⅜ In.	14 Ft. 3 In.
19	34 Ft. 1 In.	6 Ft. 2¾ In.	15 Ft. 0 In.
20	35 Ft. 11 In.	6 Ft. 6⅛ In.	15 Ft. 9 In.

*Dimension includes 4½ in. space between top seat and wall.
**Height in open position same as closed. For Bleachers higher than 20 Rows write for complete details and dimensions.

FOR SEATING CAPACITY FIGURE 16" PER PERSON. WRITE FOR COMPLETE DETAILS ON THE "3 IN 1 HORN GYM PLAN". NO OBLIGATION

HORN BROTHERS CO.
A DIVISION OF HORN INDUSTRIES
FORT DODGE, IOWA — ESTABLISHED 1909

Mesker Steel Windows

JACKSON COUNTY MEMORIAL HOSPITAL
ALTUS, OKLAHOMA

Architects:
Hudgins, Thompson, Ball & Associates, Oklahoma City, Okla.

Contractor:
Lippert Brothers, Oklahoma City, Okla.

Mesker Sales Engineers:
Scovil & Sublett, Oklahoma City, Okla.

Every architect who specifies Mesker Steel Windows does so, it seems, for a different reason. You'll find one man contends no heavier or stronger window is made—and he's right. Another enthuses over Mesker's attention to detail . . . to better hardware, to finer finish—and he's right, too. Ease of installation, simplicity of operation, low cost maintenance . . . whether you specify Mesker for these or any other reason, remember: dollar for dollar, Mesker Steel Windows are one of America's greatest values in a building product!

MESKER INTERMEDIATE PROJECTED WINDOWS

Hospitals, schools, banks, factory offices, stores and public buildings all over the nation feature these popular steel windows. Steel members are 1¾" deep . . . extra heavy, extra strong. Available with or without hopper ventilators in a wide range of heights and widths.

MESKER BROTHERS • 4338 GERALDINE AVENUE • SAINT LOUIS 15, MISSOURI

(*Continued from page 188*)

desired, baffles may be attached to the top of the reflector. This luminaire uses two 40-watt lamps. The Miller Co., Illuminating Div., Meriden, Conn.

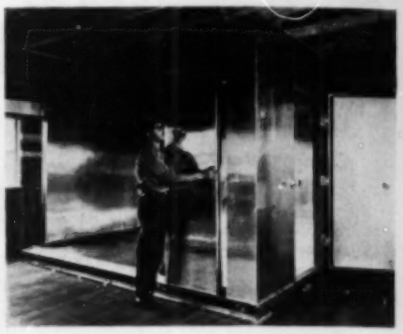
UNDERCOUNTER REFRIGERATOR

A 4 cu. ft., undercounter refrigerator is now available for such limited areas as efficiency kitchens, doctors' and business offices, recreation rooms, etc. The new model, the *U-4*, is 34½ in. high, 24 in. wide and 27 in. deep, including hardware. It is designed to fit under standard-height drainboards and kitchen counter surfaces. The door is mounted for right-hand opening, but can be converted easily to a left-hand door.

The refrigerator has a 0.45 cu. ft. freezer which can hold 16 lb. of frozen food and two 14-cube ice trays, according to the manufacturer. An anodized aluminum meat tray (holds up to 10 lb.), two chrome-finished metal shelves and an acid-resistant food liner are provided. Westinghouse Electric Appliance Div., Mansfield, Ohio.

MODULAR COOLERS

Five sizes of *Armorply* panels, consisting of a thin strip of metal adhesively bonded to plywood, have been designed to provide almost any desired amount of refrigerated space for large industrial, commercial and farm applications.



Metal-covered plywood panels, backed by insulation, serve as cooler enclosures

The modular panels, faced with either stainless steel, aluminum or electrically zinc-coated steel, are designed around a 4-in. thickness of Fiberglas insulation. The panels are available for coolers 8 ft. high, 8, 10 or 12 ft. wide, and, within 2-ft. multiples, in any length desired.

The panels, which have been under test for the past two years and are now in practical operation, provide an impervious barrier to the transfer of water vapor, according to the manufacturer. This is said to effectively eliminate, within practical limits, the main factor causing insulation to "ice up" and lose efficiency. United States Plywood Corp., Weldwood Bldg., 55 W. 44th St., New York 18, N. Y.

AWNING WINDOW HINGE

Developed to permit painting and cleaning the top sash of awning windows from indoors, is a new maintenance hinge. To operate this hinge, the mechanic simply disconnects the upper links, springs two friction type pins and lowers the sash. When through he raises the sash to its regular position, connects the links and the window is ready for normal operation. The manufacturer claims that the *Gate City Awning Window* provides access to both sides of all sash without affecting the weathertightness. Gate City Sash and Door Co., Fort Lauderdale, Fla.

(*Continued on page 192*)

INFRA Insulation Pleases the Professors

Infra Insulation has had remarkably wide use in buildings of a long list of Colleges, Universities and Engineering Schools. They have access on their own campuses to the finest scientific talent, make thorough tests, base their selection on searching, impartial appraisal. In college after college, in test after test, Infra is selected —because Infra's superior insulating values are so quickly and decisively established.

JUST A FEW COLLEGES WHICH HAVE USED INFRA

Bowdoin College, Brunswick, Maine
Colby College, Waterville, Maine
Culver Military Academy, Culver, Ind.
Harvard University, Cambridge, Mass.
Massachusetts Inst. of Technology
Michigan State, Traverse, Mich.
Princeton University, Princeton, N. J.
Purdue University, Purdue, Ind.
Wells College, Aurora, N. Y.

Infra's multiple separated aluminum sheets provide 4 reflective spaces and 4 reflective surfaces, each non-condensation-forming. Two sheets of aluminum and the accordion partition block convection currents. Infra's triangular reflective air spaces and small mass eliminate conduction as a problem.

INFRA C FACTORS AND ROCKWOOL EQUIVALENTS

C.052 Heat Flow Down, equals 6" Rockwool.
C.093 Heat Flow Up, equals 3½" Rockwool.
C.10 Lateral Heat, equals 3 1/3" Rockwool.

MULTIPLE ACCORDION ALUMINUM & TRIANGULAR REFLECTIVE AIR CELLS

Infra INSULATION, INC.
10 Murray St., N. Y., N. Y.

WRITE

Infra for details and FREE COPY of "Bulletin No. 38," issued by the National Housing Agency of the Government, reporting tests of Aluminum Insulation made by the U. S. Bureau of Standards, and dealing principally with the problems of heat transfer and condensation.

Address Dept.

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For Your Next Job Specify...

WELDWOOD FIRE DOORS

the *ONLY* wood-faced fire doors that bear this label!

ONLY WELDWOOD FIRE DOORS GIVE YOU THESE 8 UNIQUE ADVANTAGES

1. *Increased Safety*

The *only* wood-faced fire door which bears the Underwriters' label. All Weldwood Fire Doors are approved for class B openings.

2. *Beauty*

Because of their beautiful wood faces, Weldwood Fire Doors harmonize perfectly with any decorative scheme.

3. *Durability*

The Underwriters' Laboratories tested a Weldwood Fire Door for durability by mechanically opening and closing it 200,000 times. At the end of the test, the door was unaffected and still opened and closed perfectly.

4. *Dimensional Stability*

Weldwood Fire Doors are so dimensionally stable that we guarantee them against sticking in summer or rattling in winter due to any dimensional changes in the door.

5. *Light Weight*

At last . . . a real fire door that is *not* heavy or unwieldy. A standard 3 x 7 door weighs approximately 80 lbs.

6. *Vermin and Decay Proof*

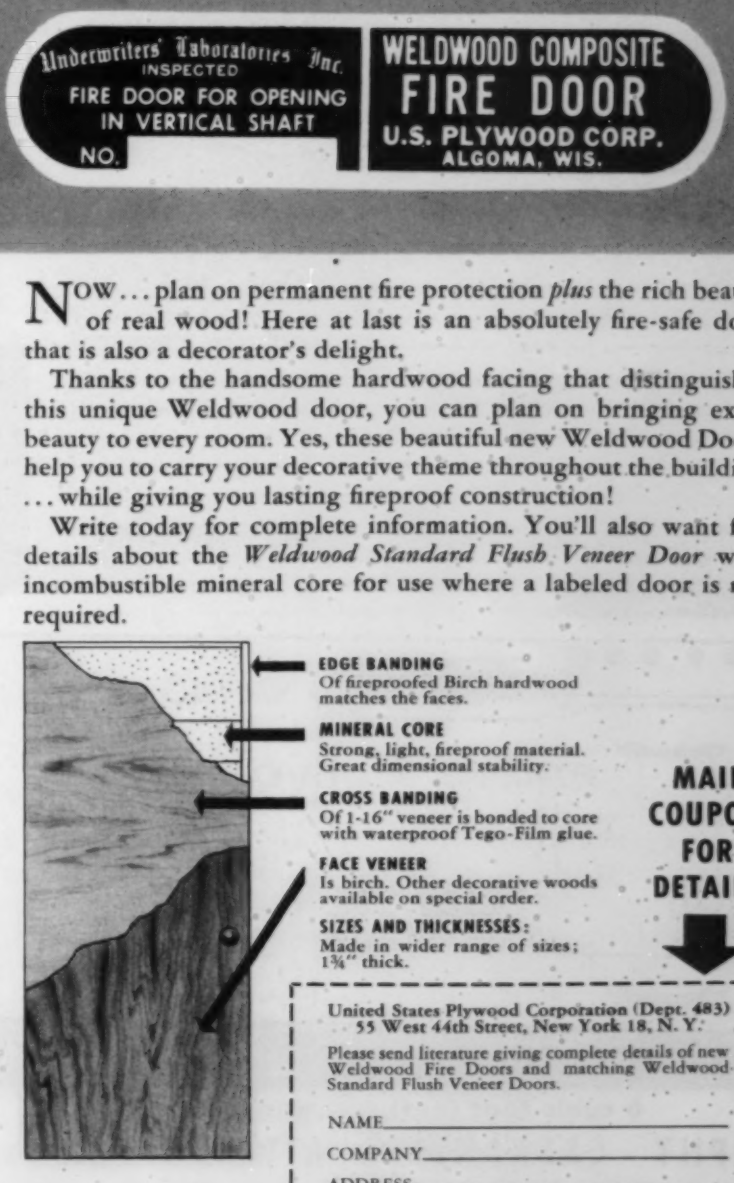
The mineral composition core used in Weldwood Fire Doors is permanently resistant to fungus, decay, and termites.

7. *High Insulating Qualities*

Another noteworthy characteristic of the core is its high insulating value over a wide range of temperatures. It is efficient against temperatures from freezing up to that of superheated steam.

8. *Moderate Cost*

Investigate these doors for use on your next job. You will be pleasantly surprised at the low initial cost, and the minimum of maintenance required.



NOW... plan on permanent fire protection *plus* the rich beauty of real wood! Here at last is an absolutely fire-safe door that is also a decorator's delight.

Thanks to the handsome hardwood facing that distinguishes this unique Weldwood door, you can plan on bringing extra beauty to every room. Yes, these beautiful new Weldwood Doors help you to carry your decorative theme throughout the building ... while giving you lasting fireproof construction!

Write today for complete information. You'll also want full details about the *Weldwood Standard Flush Veneer Door* with incombustible mineral core for use where a labeled door is not required.

EDGE BANDING
Of fireproofed Birch hardwood matches the faces.

MINERAL CORE
Strong, light, fireproof material. Great dimensional stability.

CROSS BANDING
Of 1-16" veneer is bonded to core with waterproof Tego-Film glue.

FACE VENEER
Is birch. Other decorative woods available on special order.

SIZES AND THICKNESSES:
Made in wider range of sizes; 1¾" thick.

MAIL COUPON FOR DETAILS

United States Plywood Corporation (Dept. 483)
55 West 44th Street, New York 18, N. Y.

Please send literature giving complete details of new Weldwood Fire Doors and matching Weldwood Standard Flush Veneer Doors.

NAME_____

COMPANY_____

ADDRESS_____

UNITED STATES PLYWOOD CORPORATION

55 West 44th Street, New York 18, N. Y.

Distributing units in Albany, Baltimore, Boston, Brooklyn, Buffalo, Chicago, Cincinnati, Cleveland, Detroit, Fresno, Glendale, East Hartford, High Point, Indianapolis, Los Angeles, Milwaukee, Newark, New Hyde Park, N. Y., New York, Oakland, Philadelphia, Pittsburgh, Portland, Ore., Richmond, Rochester, San Francisco, Seattle, St. Paul, Toronto. Also U.S.-Mengel Plywoods, Inc., distributing units in Atlanta, Birmingham, Dallas, Houston, Jacksonville, Kansas City, Louisville, New Orleans, San Antonio, St. Louis, Tampa.

In Canada: United States Plywood of Canada, Limited, Toronto. Send inquiries to nearest point.

(*Continued from page 190*)

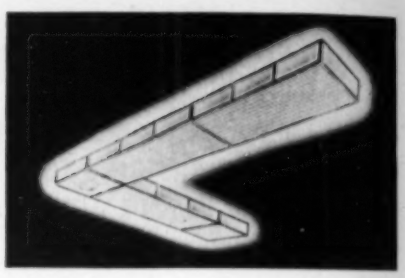
DOUBLE-DUTY KITCHEN VENTILATOR

Now available is a kitchen ventilating fan that can be operated as a window exhaust fan or can be snapped out of its window panel and be used as a portable circulating fan. The unit consists of an adjustable steel panel which holds a 10-in. fan having three, wide-area, plastic blades. When used as an exhaust the fan has a capacity of 550 cu. ft. per min. When used as a portable circulating fan it can move 900 cu. ft. of air per min. Westinghouse Electric Appliance Div., East Springfield, Mass.

MODULAR LIGHT FIXTURES

Design features of *Mitchell Module* fluorescent lighting fixtures are said to make it possible for a mass-produced lighting system to fulfill custom-fitted lighting requirements. The new system consists of four modules having either a single or multiple measurement of 16¼ in. which can be put together end-to-end, side-to-side and end-to-side to achieve unlimited patterns.

Module "A" is 16¼ in. sq., and uses four 14-watt, 15 in. lamps. Module "B" is the same size but uses one 32-watt, 12-in. dia., Circline lamp and either a spot or flood lamp. Module "C" is 48¾ by 16¼ in. and uses four 40-watt, 48 in. lamps. Module "D" is 97½ by 16¼ in. and uses four 75-watt, 425 ma Slimline lamps.



Fluorescent light fixtures in four basic sizes can be combined for many patterns

Development of a new clamp connector is said not only to make original installation simple, but also to make it possible to add Modules to existing patterns. Mitchell Mfg. Co., 2525 N. Clybourn St., Chicago 14, Ill.

Photographic wall murals can be used in small rooms to provide spacious feeling

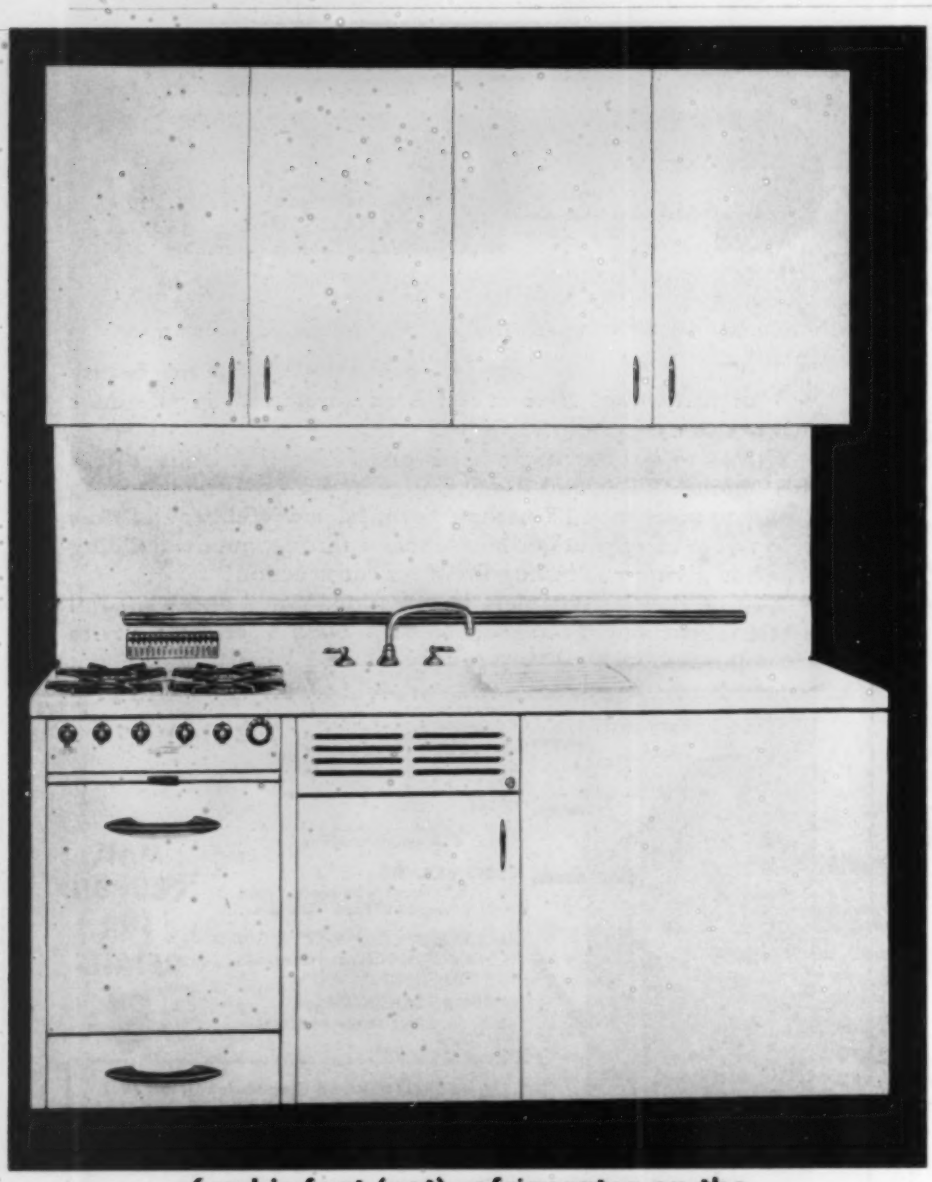
PHOTOGRAPHIC MURALS

Photographic wall murals, made by a new screenless process to maintain the high quality of the negative, are now being offered at a lower cost when used in large quantities.

Foto Murals are described as being especially suitable for use in multiple housing projects to enhance the value of the units and to create the illusion of expanding the walls of small rooms.

Foto Murals are available in sepia and black and can be installed like wallpaper

(*Continued on page 194*)



6 cubic foot (net) refrigerator on the

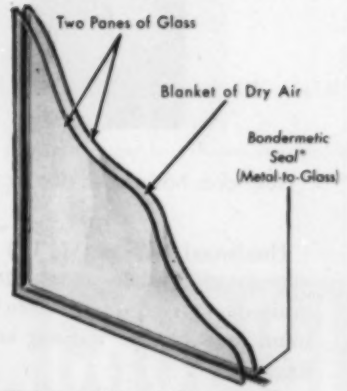
MURPHY - CABRANETTE KITCHEN - Series 69

Here is a complete family-size kitchen . . . streamlined into compact assembly only 69 inches wide. Modern range (gas or electric) with full-size oven and broiler, a 6 cu. ft. (net) refrigerator with stainless steel frozen food locker, a one-piece sink-and-range top, storage space. Entire front is genuine vitreous porcelain . . . permanent beauty that cleanses with soap and water, retains its gleaming whiteness forever. Minimum maintenance cost is proven in more than 25 years of service in rental properties. Write for complete bulletin.

DWYER PRODUCTS CORPORATION
Dept. R10 — MICHIGAN CITY, INDIANA

Architect: Carl A. Strauss, Cincinnati, Ohio.

Thermopane... adds extra comfort to daylight design



Cutaway view of *Thermopane*

With *Thermopane**, you give your clients three advantages in one wall. You bring daylight indoors, open rooms to outdoor beauty and assure greater comfort all year.

This sealed, double-glass unit solves the problem of window insulation once and for all. By specifying *Thermopane* throughout the house, you eliminate the bother and maintenance of storm sash. In winter, *Thermopane* cuts heat loss, reduces downdrafts, minimizes condensation, saves fuel. In summer, it helps keep rooms cooler. For details, write for our *Thermopane* book and list of standard sizes.

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FOR BETTER VISION, SPECIFY THERMOPANE
MADE WITH POLISHED PLATE GLASS

L O F *Thermopane*

MADE ONLY BY
LIBBEY · OWENS · FORD GLASS COMPANY
6109 Nicholas Building, Toledo 3, Ohio

(*Continued from page 192*)

by a competent paper hanger in less than an hour, according to the manufacturer. Foto Murals of California, 672 S. Lafayette Park Place, Los Angeles, Calif.

CEILING-TYPE VENTILATOR

Outstanding advantages claimed for the new *ILG Ceiling-Type Ventilator* are ease of installation and maintenance and quiet operation at full capacity. The complete grille and fan assembly is hinged so that it may be easily detached from the unit for cleaning, and the patented fan wheel has been designed to combine high capacity with low cost and quiet operation. A built-in electrical plug and the hinge hold the grille in place; when the grille is opened for cleaning, the circuit is automatically broken.

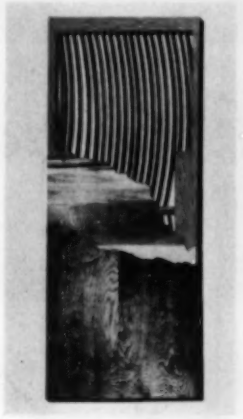
A patented spring booster on the insulated discharge damper opens the damper freely when the ventilator is started and closes it when the ventilator is turned off.

The mounting plate is adjustable to permit installation flush with the ceiling in plaster or plywood construction from ¼ to 1¼ in. thickness. Standard 3¼ by 12 in. wall stack duct and elbows are recommended for use with the ventilator. Ilg Electric Ventilating Co., 2850 N. Crawford Ave., Chicago 41, Ill.

High capacity featured in ceiling fan

HOLLOW FLUSH DOORS

The *Hasko Arch-Kor* flush door employs a series of arched ribs, running vertically within a solid lumber frame, to support the face panels of the door. By eliminating horizontal members in contact with the face panels, the manufacturer claims that any "show through" of core construction in the finished door is eliminated. The ribs are of ⅛ in. veneer, spaced on 1½ in. centers, and arched 2 in.



Flush door has arched ribs for support

Hardwood veneers (1/10 in.) and face veneers of 1/20 in. birch are cross-grained and bonded to the core for maximum resistance to warping and buckling.

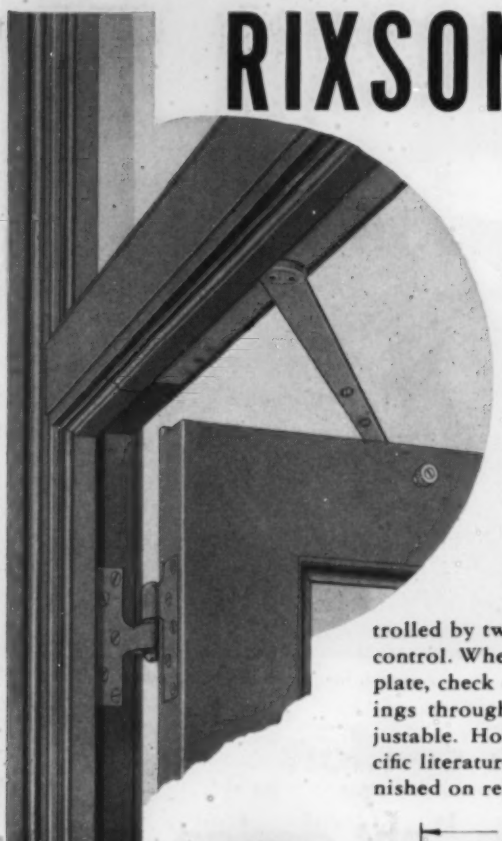
The doors are available in two grades: unselected for color, but matched for grain; and unselected for color and unmatched. Haskelite Mfg. Corp., Grand Rapids 2, Mich.

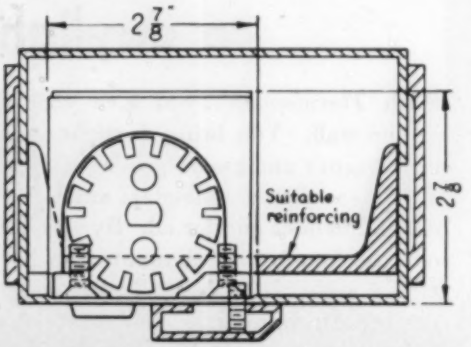
(*Continued on page 196*)

RIXSON CONCEALED OVERHEAD DOOR CHECKS

Especially Compact for NARROW Headframes and Transom Bars ... Metal or Wood

Rixson No. 220 concealed single-acting overhead door checks—for interior, vestibule or entrance doors—are particularly desirable when small space is a factor. These sturdy, reliable units are only 2⅞" wide x 2⅞" high and 17" long. Checking action is controlled by two valves—for closing and latch control. When door is closed, no parts of the plate, check or arm are visible. Roller bearings throughout. Spring control easily adjustable. Hold-open feature available. Specific literature and specifications will be furnished on request.





Special problems of installation will receive prompt attention from the Rixson engineering and designing departments.

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LOS ANGELES—George E. Tupper, 1010 W. Olympic Blvd., Tel. Prospect 0924.
NEW YORK—Fred G. MacKenzie, 107 Reade St., Tel. Barclay 7-6852.
PHILADELPHIA—G. Norris Williams, 211 Greenwood Ave., Wyncote, Pa., Tel. Ogontz 1929.
PORTLAND, ORE.—W. N. Browning, 529 Henry Bldg., Tel. Atwater 5839.
SEATTLE—E. R. Spragg, 4012 East 38th St., Tel. Kenwood 7605.
WASHINGTON, D. C.—L. J. Fait, 2068 14th St. N., Arlington, Va. Tel. Chestnut 6262.

up from the minor leagues

comes stainless sheet and strip

Stainless steel has now moved up to the major leagues. Advances in strip mill techniques have played an important part. Now, CRUCIBLE, using the best of these accepted modern techniques, plus exclusive ones of its own . . . is producing stainless by specialty steel production methods at the busy Midland Works. In the *first* mill *specifically* built for the production of stainless, top steel specialists are putting to good use $18,000,000 of new tools and buildings. When the leader in the specialty steel field applies specialty steel production methods to stainless, you can rightly expect that from CRUCIBLE you'll get the best that a half century of experience and modern tools can provide.

The new mill will produce stainless in widths of ½″ to 50″ inclusive, in all gauges, grades and finishes. This is important news to users of stainless steels, because with Trent Tube Company joining the organization, you can get stainless from Crucible in every form: sheets, strip, plates, bars, wire, forgings, castings and tubing. Crucible offers comprehensive data sheets and unsurpassed metallurgical service. Your inquiries are welcome.

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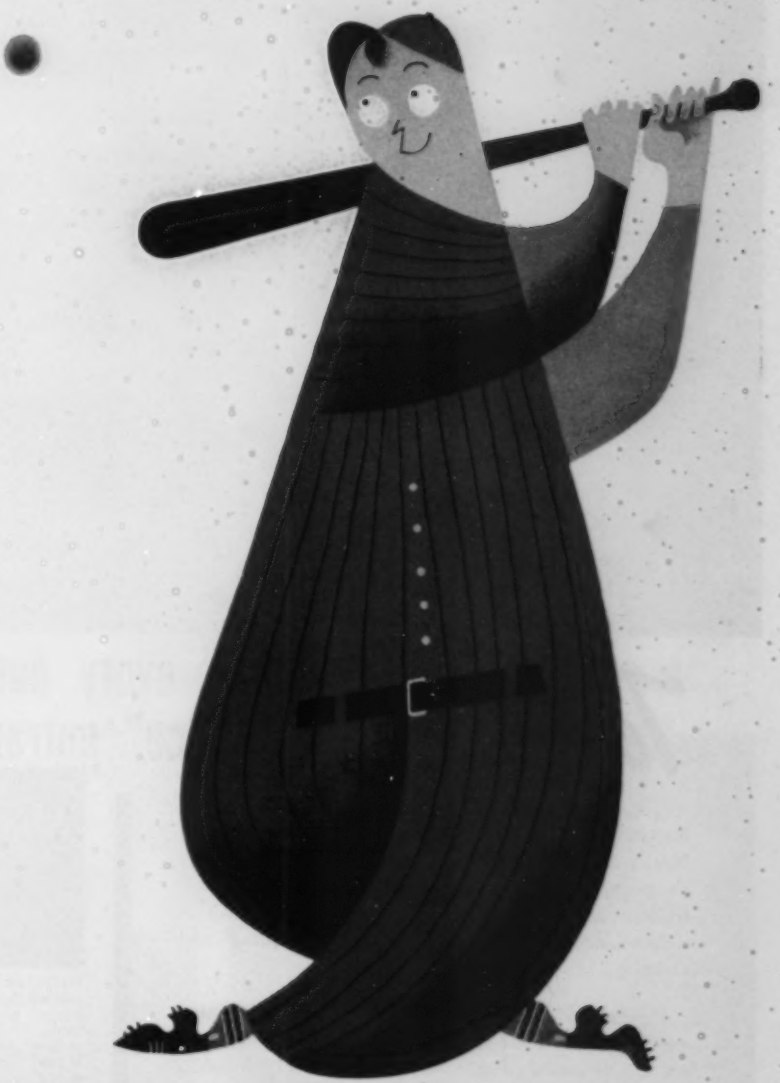


CRUCIBLE first name in special purpose steels

hot and cold rolled **STAINLESS SHEET AND STRIP**

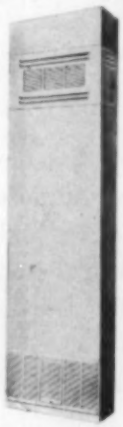
STAINLESS • HIGH SPEED • TOOL • ALLOY • MACHINERY • SPECIAL PURPOSE • STEELS

(*Continued from page 194*)

WALL HEATER

New models of the *Royal Jet-Flow* wall-type warm air heater are said to combine compactness with high quality performance. The 45,000 and 55,000 Btu input sizes occupy a space of only 10⅜ by 27⅜ in., and the 25,000 and 35,000 Btu input sizes measure only 10⅜ by 21 in. The new model which is smaller in size than former ones is enclosed in a Masonite hardboard cabinet.

Air is taken in through a register located at floor level, and is passed over the heating element into a cone shaped duct. When it leaves the register located just below the ceiling level, it is travelling at about 300 ft. per min. With this velocity plus the downward direction of the louvers, a portion of the air is said to reach the floor almost immediately, with the balance flowing across the ceiling, down outside walls and back across the floors to the register. Royal Heaters, Inc., 1024 Westminster Ave., Alhambra, Calif.

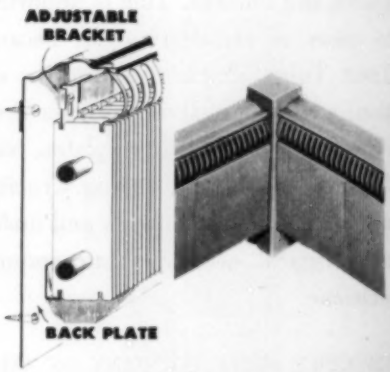


New model wall heater is reduced in size

RADIANT BASEBOARD

Featuring economy in both original and labor costs is the new *Kritzer Radiant Baseboard* which is said to require only three simple steps for a finished installation.

The coils of the baseboard system consist of 10 ft. sections of 2 by 5½ in. aluminum fins mechanically bonded to two, 3 in. on center, copper supply tubes. No fittings are required to join the ends of the copper tubing when the coils are being installed. As two sections are brought together, the supply ends in one section are belled, the ends of the other section are inserted into this bell, and a solder ring is heated and melted between the two.



Baseboard heater installed in three steps

Coils are mounted so that the air can circulate behind them. Kritzer Radiant Coils, Inc., 2901 Lawrence Ave., Chicago 25, Ill.

(*Continued on page 198*)

Terrazzo makes every door a "service" entrance

No pampering needed when TERRAZZO is underfoot! Marble-hard and concrete-durable, TERRAZZO asks no quarter and gives no trouble. It is highly stain-resistant and practically mar-proof. It is fool-proof in maintenance, requiring only routine washing and cleaning.

Designs? *Unlimited.* Colors? *A wide range.* Other uses besides floors? *Sure: walls, baseboards, wainscots, and stairs.* Replacement? *When the building is replaced!* Specify TERRAZZO and do your client a permanent service.

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AMERICAN-Standard

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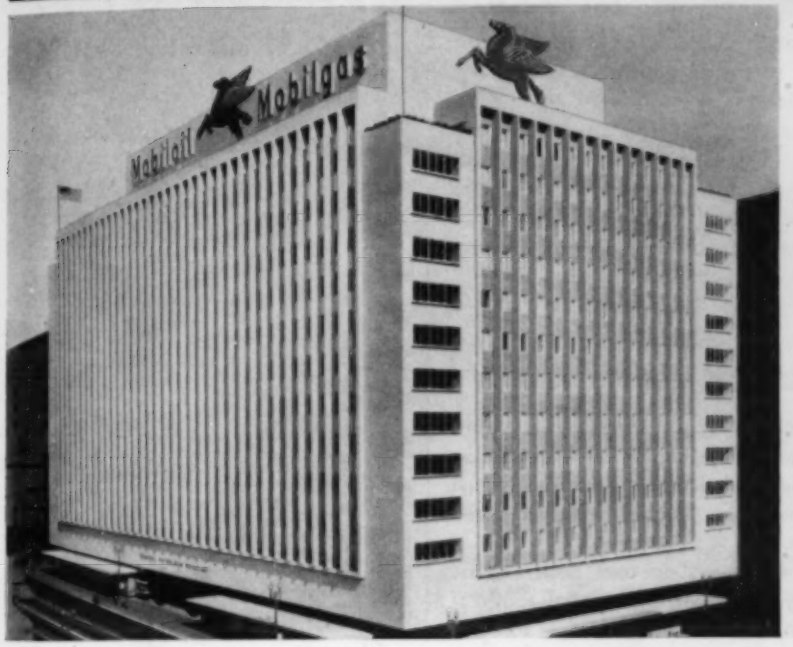

■ American-Standard Plumbing Fixtures go into another outstanding building!

This time it's Southern California's largest office building, the new $11,000,000 home of General Petroleum Corporation in Los Angeles.

In keeping with the scores of engineering and architectural features that make this striking structure one of the nation's most modern, are the hundreds of fine quality American-Standard Plumbing Fixtures throughout the big building.

An interesting feature about this installation is that the fixtures are wall supported. This absence of floor obstructions makes for neater, cleaner rooms . . . and greatly reduces the important item of rest-room maintenance.

For more than half a century, American-Standard products have been enjoying the unqualified recommendation of leading architects and builders. Not only because of the fine quality and unvarying dependability of the products themselves, but also because the American-Standard line covers heating and plumbing for every type of installation.

Your Heating and Plumbing Contractor will be glad to furnish full information about the complete American-Standard line. **American Radiator & Standard Sanitary Corporation,** P. O. Box 1226, Pittsburgh 30, Pa.

General Petroleum's New Los Angeles Home has AMERICAN-Standard *Plumbing Fixtures throughout*

Architects: Wurdeman & Becket, Los Angeles
Mechanical Engineer: Ralph E. Phillips, Los Angeles
General Contractor: P. J. Walker Company, Los Angeles
Plumbing Contractors: Howe Brothers, Los Angeles
Wholesale Distributor of Plumbing Fixtures: Keenan Pipe & Supply Company, Los Angeles

FENWICK Lavatory, made of genuine vitreous china, fits neatly into one of the coat closets built inside many of the building's modern offices.

GLENCO Water Closets are ideal for public use. Quiet, thorough-flushing, easy-to-clean. Shown in off-the-floor partitioned compartments.

LUCERNE Lavatories and **WASHAL** Urinals, both of genuine vitreous china, make the Men's Rooms in this new building models of cleanliness . . . go far towards reducing maintenance time and costs.

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Don't let Winter unnecessarily increase your power costs. Have Todd burners—save up to 10% on your fuel and maintenance bills . . . get greater power capacity. Let skilled Todd specialists, backed by 35 years of Todd experience, engineer your boiler plant for utmost economy . . . replace your obsolete equipment . . . provide efficient new installations.

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(*Continued from page 196*)

COMBINATION AIR DIFFUSER, PENDANT LIGHT

Where architectural or decorative consideration require an air diffuser and light fixture to be located at the same spot, a modification of the *Kno-Draft Adjustable Air Diffuser* is available which will accommodate any pendant light fixture, according to the manufacturer.

The diffuser is said to retain all of its functional features when combined with pendant lighting which can be incorporated in any size or type of diffuser. W. B. Connor Engr. Corp., 114 E. 32nd St., New York 16, N. Y.

TEMPERATURE CONTROL SYSTEM

A completely self contained temperature control system for hand-fired house heating plants has been developed which automatically adjusts dampers and checks.

Since the system uses both electric and hydraulic power, the small motor is said to exert more than ample force to adjust the dampers and checks. The assembly consists of an oil-encased electric motor which operates a hydraulic pump; the pump in turn forces oil against a diaphragm, moving an arm connected by pulleys and chains to dampers.

The thermostat of the *Y 219A Electric Janitor Kit* is said to be less than half the size of conventional thermostats and is designed to activate short, regulated operations to maintain even temperatures. Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.

FLOW CONTROL VALVE

Among the uses for the *Dole Flow-Control Valve*, described as giving a constant flow of water regardless of pressure, are for instantaneous water heaters, showers, automobile washing equipment, etc.

Previously this valve has been offered only as an integral part of Dole equipment, but now is available as a separate unit. The valve uses a simple control consisting of a flexible orifice that varies its area in inverse proportion to the pressure. Laboratory tests are said to show that these valves will accurately control the flow at any pressure from 15 to 150 psi. The Dole Valve Co., 1933 Carroll Ave., Chicago 12, Ill.

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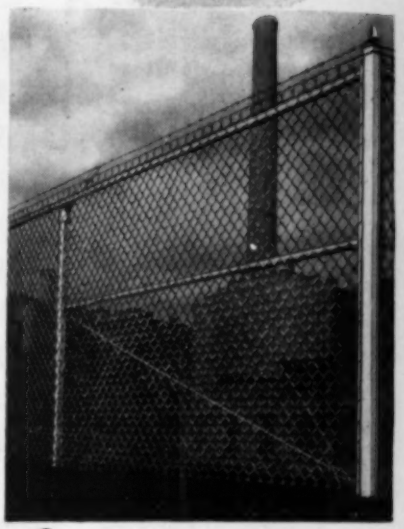

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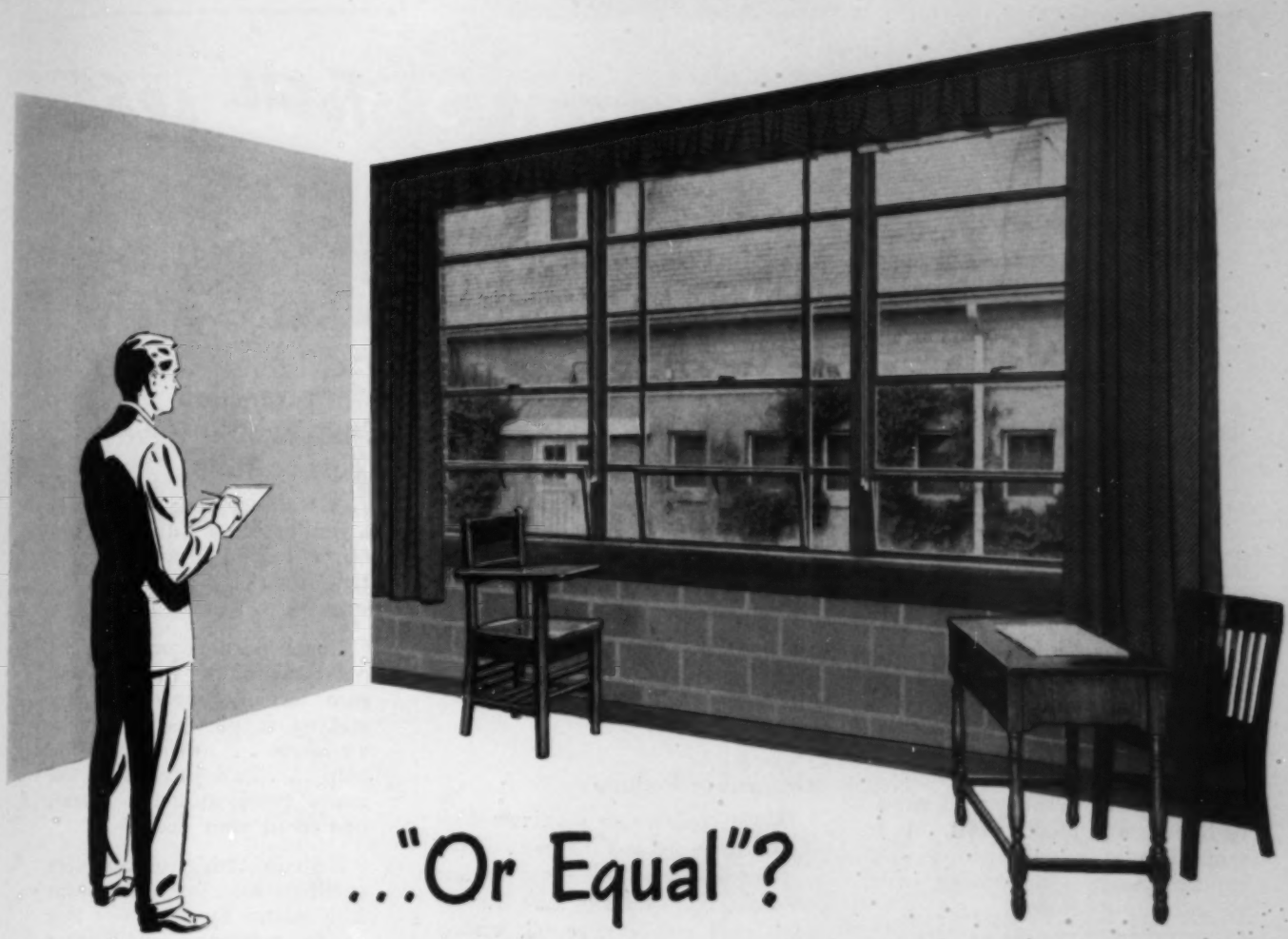

. . . "Or Equal"?

"Such and such a brand . . . or equal". The term is necessary, sure. But there are so many things about a product . . .

Take Fenestra* Intermediate Steel Windows. Look closely and you'll see that there is not even a hairline crack at frame and vent corner joints. Those corners are mitered, welded and smooth finished, giving the entire window a strength and rigidity hard to "equal". Lift the window and shake it. You'll see.

Notice, too, that weathering baffles are built in . . . not just "applied". Independent laboratory tests prove Fenestra Intermediate Steel Windows tough to "equal" for minimizing air infiltration.

Specially designed hardware brackets are *welded,* not screwed, to ventilators. They stay on, tight, for years.

Those are little things. But they add up to better performance, longer. And, naturally, client satisfaction.

Fenestra Windows' larger glass areas invite in extra daylight. Air-deflecting vents bring in draftless ventilation. Designed to modular standards, these beautiful windows can be installed economically as single units or as whole window walls of combined units. Maintenance costs are low. Cleaning and screening are done from *inside.*

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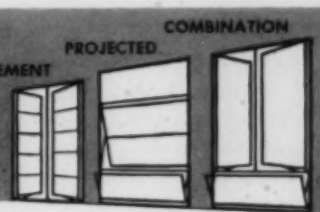

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